

Vol. II—June 1847—June 1848

ALBANY

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FORREST

JOURNAL OF CLIMATE

PHARMACEUTICALS, CHEMICALS, AND AGRICULTURAL BOTANY

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

Vol. II—July 1847—June 1848

ALBANY:

PUBLISHED BY LEONARD TUCKER

NEW YORK, N. Y. (AP) — The New York City Police Department today announced that it had received information that a man had been seen in the area of the World Trade Center on September 11, 2001.

THE
HORTICULTURIST

AND
JOURNAL OF RURAL ART AND RURAL TASTE.

DEVOTED TO

HORTICULTURE, LANDSCAPE GARDENING, RURAL ARCHITECTURE, BOTANY,
POMOLOGY, ENTOMOLOGY, RURAL ECONOMY, &c.

EDITED BY A. J. DOWNING,

AUTHOR OF "LANDSCAPE GARDENING," "DESIGNS FOR COTTAGE RESIDENCES," "FRUITS AND FRUIT TREES
OF AMERICA," ETC., ETC.

VOL. II.—JULY 1847—JUNE 1848.

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THE
Horticulturist
AND
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JOURNAL OF RURAL ART AND RURAL TASTE.

VOL. II.

JULY, 1847.

No. 1.

THE MULTIPLICATION OF HORTICULTURAL SOCIETIES is taking place so rapidly of late, in various parts of the country, as to lead one to reflect somewhat on their influence, and that of the art they foster, upon the character of our people.

Most persons, no doubt, look upon them as performing a work of some usefulness and elegance, by promoting the culture of fruits and flowers, and introducing to all parts of the country the finer species of vegetable productions. In other words, they are thought to add very considerably to the amount of physical gratifications which every American citizen endeavors, and has a right to endeavor, to assemble around him.

Granting all the foregoing, we are inclined to claim also, for horticultural pursuits, a political and moral influence vastly more significant and important than the mere gratification of the senses. We think, then, in a few words, that Horticulture and its kindred arts, tend strongly to fix the habits, and elevate the character of our whole rural population.

One does not need to be much of a philosopher to remark that one of the most striking of our national traits, is the SPIRIT OF UNREST. It is the grand energetic element which leads us to clear vast forests,

and settle new States, with a rapidity unparalleled in the world's history; the spirit, possessed with which, our yet comparatively scanty people do not find elbow-room enough in a territory already in their possession, and vast enough to hold the greatest of ancient empires; which drives the emigrant's wagon across vast sandy deserts to California, and over Rocky Mountains to Oregon and the Pacific; which builds up a great State like Ohio in 30 years, so populous, civilized and productive, that the bare recital of its growth sounds like a genuine miracle to European ears; and which overruns and takes possession of a whole empire, like that of Mexico, while the cabinets of old monarchies are debating whether or not it is necessary to interfere and restore the balance of power in the new world as in the old.

This is the grand and exciting side of the picture. Turn it in another light, and study it, and the effect is by no means so agreeable to the reflective mind. The *spirit of unrest*, followed into the bosom of society, makes of man a feverish being, in whose Tantalus' cup *repose* is the unattainable drop. Unable to take root anywhere, he leads, socially and physically, the uncertain life of a tree transplanted from place to

place, and shifted to a different soil every season.

It has been shrewdly said that what qualities we do not possess, are always in our mouths. Our countrymen, it seems to us, are fonder of no one Anglo-Saxon word than the term *settle*.* It was the great object of our forefathers to find a proper spot to settle. Every year, large numbers of our population from the older States, go west to settle; while those already west, *pull up*, with a kind of desperate joy, their yet new-set *stakes*, and go farther west to settle again. So truly national is the word, that all the business of the country, from State debts to the products of a "truck farm," are not satisfactorily adjusted till they are "settled;" and no sooner is a passenger fairly on board one of our river steamers, than he is politely and emphatically invited by a sable representative of its executive power, to "call at the captain's office *and settle!*"

Yet, as a people, we are never settled. It is one of the first points that strikes a citizen of the old world, where something of the dignity of repose, as well as the value of action, enters into their ideal of life. DE TOCQUEVILLE says, in speaking of our national trait:

"At first sight, there is something surprising in this strange unrest of so many happy men, restless in the midst of abundance. The spectacle itself is, however, as old as the world. The novelty is to see a *whole people* furnish an exemplification of it.

"In the United States a man builds a house to spend his latter years in, and sells it before the roof is on; he brings a field into tillage, and leaves other men to gather

the crops; he embraces a profession, and gives it up; he settles in a place, which he soon after leaves, in order to carry his changeable longings elsewhere. If his private affairs leave him any leisure, he instantly plunges into the vortex of politics; and if at the end of a year of unremitting labor, he finds he has a few days vacation, his eager curiosity whirls him over the vast extent of the United States, and he will travel fifteen hundred miles in a few days, to shake off his happiness."

Much as we admire the energy of our people, we value no less the love of order, the obedience to law, the security and repose of society, the love of home, and the partiality to localities endeared by birth or association, of which it is in some degree the antagonist. And we are therefore deeply convinced that whatever tends, without checking due energy of character, but to develop along with it certain virtues that will keep it within due bounds, may be looked upon as a boon to the nation.

Now the difference between the son of Ishmael, who lives in tents, and that man who has the strongest attachment to the home of his fathers, is, in the beginning, one mainly of outward circumstances. He whose sole property is a tent and a camel, whose ties to one spot are no stronger than the cords which confine his habitation to the sandy floor of the desert, who can break up his encampment at an hour's notice, and choose a new and equally agreeable site, fifty miles distant, the next day—such a person is very little likely to become much more strongly attached to any one spot of earth than another.

The condition of a western emigrant is not greatly dissimilar. That long covered wagon, which is the Noah's ark of his preservation, is also the concrete essence of house and home to him. He emigrates,

* Anglo-Saxon *sath-lian*, from the verb *settan*, to set, to cease from motion, to fix a dwelling place, to repose, etc.

he "squats," he "locates," but before he can be fairly said to have a fixed home, the spirit of unrest besets him; he sells his "diggins" to some less adventurous pioneer, and *tackling* the wagon of the wilderness, migrates once more.

It must not be supposed, large as is the infusion of restlessness in our people, that there are not also large exceptions to the general rule. Else there would never be growing villages and prosperous towns. Nay, it cannot be overlooked by a careful observer, that the tendency "to settle" is slowly but gradually on the increase, and that there is, in all the older portions of the country, growing evidence that the Anglo-Saxon love of home is gradually developing itself out of the Anglo-American love of change.

It is not difficult to see how strongly horticulture contributes to the development of local attachments. In it lies the most powerful *philtre* that civilized man has yet found to charm him to one spot of earth. It transforms what is only a tame meadow and a bleak aspect, into an Eden of interest and delights. It makes all the difference between "Araby the blest," and a pine barren. It gives a bit of soil, too insignificant to find a place in the geography of the earth's surface, such an importance in the eyes of its possessor, that he finds it more attractive than countless acres of unknown and unexplored "territory." In other words, it contains the mind and soul of the man, materialized in many of the fairest and richest forms of nature, so that he looks upon it as tearing himself up, root and branch, to ask him to move a mile to the right or the left. Do we need to say more, to prove that it is the panacea that really "settles" mankind?

It is not therefore, without much pleasurable emotion, that we have had notice

lately of the formation of five new Horticultural societies, the last at St. Louis, and most of them west of the Alleghanies. Whoever lives to see the end of the next cycle of our race, will see the great valleys of the west, the garden of the world, and we watch with interest the first development, in the midst of the busy fermentation of its active masses, of that beautiful and quiet spirit, of the joint culture of the earth and the heart, that is destined to give a tone to the future character of its untold millions.

The increased love of home and the garden, in the older States, is a matter of every day remark; and it is not a little curious, that just in proportion to the intelligence and *settled* character of its population, is the amount of interest manifested in horticulture. Thus, the three most settled of the original States, we suppose to be Massachusetts, New-York and Pennsylvania; and in these States horticulture is more eagerly pursued than in any others. The first named State has now seven horticultural societies; the second, seven; the third, three. Following out the comparison in the cities, we should say that Boston had the most settled population, Philadelphia the next, and New-York the least so of any city in the Union; and it is well known that the horticultural society of Boston is at this moment the most energetic one in the country, and that it is stimulated by the interest excited by societies in all its neighboring towns. The Philadelphia society is exceedingly prosperous; while in New-York, we regret to say, that the numerous efforts that have been made to establish firmly a society of this kind have not, up to this time, resulted in any success whatever. Its mighty tide of people is as yet too much possessed with the spirit of business and of unrest.

REMARKS ON THE SCIENCE OF GARDENING—No. II.

BY DR. WM. W. VALK, FLUSHING, L. I.

EARTHS AND SOILS.—In our first article,* introductory to the series, an attempt was made to show that gardening was an art of far higher pretensions than those persons can admit it to be, who look only to the routine of the mechanical operations which attend it. And also, by referring to the mighty agents which are constantly exerted in effecting the development and progress of every plant, from the humblest moss to the largest tree, we hoped to make it evident that it ought to be treated and studied as a *science*, which can never be duly appreciated until its principles be taught in seminaries, or in classes attached to horticultural societies, by men of talent and sound practical knowledge.

Earths and soils being essential to the growth of plants, and, to a certain extent, familiarly known to every one, claim our first attention; yet it must be confessed, that to attain a perfect understanding of their structure and components, would demand a profundity of chemical knowledge which few can hope to acquire. The student must not therefore, be perplexed by any attempt to enter into the mysteries of science, consequently we restrict ourselves to the pointing out of what ought to be, and may be known. The *great* object we desire to accomplish, must be left to time and circumstances.

The very term *earth*, involves a tissue of errors and misconceptions, which are the sources of many of the failures that professional men, in common with amateurs, are subjected to. *Loam* is a word in the mouth of every one; we meet with it on every

horticultural page; but who understands it? Agricultural chemists have felt the importance of the difficulty, and have written and lectured on the subject of *analysis of soils*, yet their labors have not been duly appreciated.

By this term *analysis*, is to be understood the dissolution, disseverment, or entire separation of parts, under powerful chemical agency; and therefore, we at once perceive how difficult it is for those who are not familiar with the processes of the laboratory, to investigate satisfactorily the properties of earths and soils. Yet we unhesitatingly affirm, that a complete understanding of their agency in the process of cultivation, cannot be had, without the assistance of analytic chemistry; therefore, we claim that this branch of science ought to become a part of horticultural education. So far, we have gained a point; for if it be true that a soil, in order to be properly applied to a plant, should be thoroughly known, then the science of analysis should be taught to the youth of the rising generation, whose aim it is to keep pace with the intelligence of the age.

But though we claim this admission, we are conscious that in the present state of knowledge, any attempt to elucidate the direct processes of analysis would be embarrassing; therefore, we propose to adopt a more simple order of investigation, by which we hope to remove difficulties, and to instruct any one to acquire, with some degree of precision and certainty, the estimated component of an earth, and its applicability to the operations of horticulture.

In the first number of the *Journal of the*

* Vol. I., p. 505.

Royal Agricultural Society of England, is a prize essay on soils, by the Rev. Mr. Rham. This gentleman, perceiving the difficulties attendant upon a regular analysis by chemical agents, devised and propounded a *mechanical* process, which possesses high merit. It has been honorably noticed in several periodicals, but, able as it is, the processes described are too elaborate for ordinary practice. Something more simple will answer better.

The three chief earths, which will be found in almost every good garden, are *loam*, *heath earth* (erroneously termed peat,) and *leaf mould*. *Sand* of every kind is in constant requisition; that is, pure silver, or glass-house sand, which needs no investigation, for it is little else than flint in a state of minute division, and therefore not susceptible of decomposition.

Loam is the staple of the land; it occurs abundantly, but varies extremely in its texture and quality. That kind which is propitious to every operation of the garden and floriculture, is soft, and smooth or unctuous, but so little liable to adhere or clod, that if a handful of it be tightly compressed, when just so moist as to be in a fit condition for potting, and be suffered to fall from the hand, it will break on the ground into fine particles. Such a loam will remain firm, yet open, in a garden pot, without cracking into fissures or detaching itself from the sides. It is composed of pure clay, very fine sand, iron in a condition resembling ochre, and generally a small proportion of chalk. In naming *pure clay* (alumina,) we do not mean clay in the common sense of the term, because the stiffest and most binding clays of the field contain a very large proportion of sand. But to prove the existence of the above named earths, recourse must be had to chemistry; yet as it is not our present object so to do, our investiga-

tion must be confined to texture only; therefore, whenever it is intended to compare two kinds of loam, the gardener should possess himself of a sort he knows to be good, approaching in quality to that above described, and by submitting it to the following simple operations two or three successive times, in order to prevent error in early practice, a *standard* will be obtained by which to judge of the value and applicability of any loam that is found elsewhere. The *instruments* of analysis will consist of a pair of scales, sufficiently accurate to detect a single grain, a set of troy weights, three or four jugs or tall narrow glasses with lips, a strainer with fine holes, a small hair sieve, another of gauze, a glass funnel, a few folded pieces of white filtering paper, a small wedgwood mortar with a lip and pestle, and two or three tumblers. These will form a very ample set of utensils; though, with the scales, two small jugs, the mortar, and a few cups, all may be done that is necessary.

Process:—Collect a specimen of the loam to be examined, dry it in the sun, and remove any stones or pieces of wood that may be among it. Then weigh an ounce or half an ounce, troy or apothecary's weight—the first 480 grains, the latter 240. Rub the earth in the mortar, so as to detach the gritty sand, and separate *that* by the sieve. Weigh the grit, and note the weight in grains: again weigh the fine siftings accurately, and make up any loss by a little more fine earth: then dry it in a saucer at a heat of about 250 degrees. Weigh it *while hot*, and the loss will show the quantity of moisture which the soil retains naturally, however dry it may appear. This moisture it will attract again by being exposed to the atmosphere.

Return the fine earth to the mortar, and rub it with water, gradually added, till a

separation of parts be apparent ; then pour off the floating matter, and repeat the rubbing and washing with fresh water, till nothing but sand remain in the mortar : dry this sand by placing the mortar on a grate or stove. In the meantime all the waters being collected together in one jug or glass, will gradually deposit the fine particles, and the liquor will exhibit more or less color, resulting from vegetable or other manuring substances contained in the earth.

This earth and water should next be well mixed, and after standing quiet for a minute or two, be poured into another vessel slowly and cautiously, because some sand will pass from the mortar, and this must be separated by repeated washings.

This second process will separate the fine matter of the soil, and the sediment can readily be collected by pouring off the water that appears quite clear, and then the remainder *with* the sediment, either into a plate or a paper filter previously weighed and placed in a funnel. In either case, the few particles remaining in the jug must be removed by a little more water, and added to the rest, or be wiped off with a piece of dry linen accurately weighed beforehand. The earthy sediment is to be first dried by slow evaporation, and then by a heat equal to that which was employed in the first instance. All the dried products are to be weighed, and when three experiments of the kind have been completed, the operator may reach his conclusions. Thus, of 240 grains, 120 may be of the *fine earths*, which we call clay, as they contain all the alumina of the soil ; 20 grains of *coarse sand*, separated by sifting, and 90 grains of *fine sand*, left by the several washings. Some loss there undoubtedly is, and 10 grains is not too great an allowance in 240.

By this investigation, it is evident we do

not detect the chalk, iron, or pure clay ; nor can we hope to do so, without chemical agency ; but the discovery has been made, *how to compare one soil with another*, and we can now form some idea of the errors and failures which attend a vague and random use of terms, and no longer take it for granted that the loam of a Flushing nursery is identical with one so called in Ohio.

But there is also *vegetable nutritive matter* in all loams, and a portion of this is soluble in water : the actual weight of it may be ascertained by taking a fourth parcel of the dried, powdered loam, and keeping it at a full red heat till there remain no black color in the earth after becoming cold ; the loss of weight will then show the quantity of vegetable fibre (or of the substance now called *humus*,) which the loam contained ; and thus its fertilizing qualities will be more readily estimated. It is astonishing to what extent *sand* may exist in a loam, and yet leave it hard bound after watering ; a sharp, harsh, gravelly grit may form three parts of four of a loam that then remains quite intractable ; therefore we advise the gardener to attend strictly to the texture of the sand which, in the best loams, is finer than silver sand ; upon this ingredient depends the softness of the loam, and its fitness for the purposes of pot culture. If equal parts of this fine earth and heath soil be required for a certain tribe of plants, a gardener who has only a stiff and rigid loam at command, must only use one-third or less of it, otherwise he must fail in keeping his plants in health.

Of *leaf mould* and manure, we must speak in another article. *Sand*—pure sand—requires no analysis ; but pit sand should be washed. *Heath soils* differ exceedingly, yet all contain iron. They only require the operation of fire to ascertain their relative

value. Each specimen should be dried, weighed, and burned in a crucible, or iron ladle, till nothing but sand remain; the loss of weight will then show how much vegetable matter each parcel contained.

WM. W. VALK, M. D.

EFFECTS OF THE SEVENTEEN YEAR LOCUST ON THE ROOTS OF TREES.

BY J. A. K., ALBANY.

MR. DOWNING—In the proceedings of the Academy of Natural Sciences of Philadelphia, of Nov. and Dec., 1846, are reported some remarks by Miss MORRIS, in relation to the larvæ of the locust (*Cicada septemdecim*) preying upon the roots of fruit trees. As relating to the article in the November number of the Horticulturist, upon "Renovating an 'outcast' pear tree," you may deem them sufficiently interesting and important to lay before the readers of your valuable journal.

Before copying the remarks of Miss M., allow me to make some suggestions respecting the experiment of 'J. B. W.' detailed in the number of the 'Horticulturist' referred to.

Cutting off a portion of the roots of an old tree, in order to restore it to healthful vigor and fruitfulness, may be justified by reasons which I do not understand, but I confess the practice *appears* to me quite *unnatural*. This of course has no reference to dead or much injured roots. To amputate such, is reasonable enough; but to cut off all the roots, indiscriminately, at a given distance from the tree, is the point excepted to.

The *rationale* of 'J. B. W.'s' experiment, as given, is, that the tree had exhausted the proper elements from the soil, in consequence of which the fruit failed. These elements were restored, by the fresh earth mixed with the scorïæ, charcoal, and potash.

Miss MORRIS, as you will perceive, gives another and different explanation. She supposes the *larvæ of the Cicada* to have been the real cause of disease, and in cutting off the roots, they were removed, and the trees then left free 'to take advantage of the congenial soil placed around them.'

Assuming the first, as the true cause of the evil, I would suggest, that the remedy was very imperfectly applied—the renovated soil being merely presented at the extremities of the roots; whereas they should have been entirely uncovered and the new soil covered over them.

Also the practice of 'J. B. W.' was not adapted to the *larvæ* theory. For there is no reason to suppose the *larvæ* occupied the extremities of the roots any more than the inner portions; and particularly too, if Miss M.'s inference be true, that 'the grubs never leave the roots they first fasten on,' and therefore cutting off the extremities would not remove the evil.

Nor do I think the result of the experiment in question, affords even presumptive evidence, that the plan adopted was the best. *Only two* bushels from one tree, and *four* from the other, the *third* year after the remedy was applied, and that from full grown trees. Now, I have faith to believe, that if your excellent correspondent, 'J. B. W.,' had omitted the procrustean operation upon the roots, and had simply removed the old soil and substituted the new, as already suggested, and as his trees were probably

suffering in part from the *Cicada*, if he had scraped the roots while uncovered, and brushed them over with the soft soap, to destroy the *larvæ*, not omitting the outside process of 'heading back the top,' scraping the bark, &c., that the third year would have afforded him three times six bushels from the two trees.

But I beg pardon for keeping you so long from the article of Miss MORRIS. Here it is, *verbatim et literatim* :

"I have for a number of years, believed that the failure of fruit on trees over twenty years old, was mainly owing to the ravages of the *larvæ* of the *Cicada septemdecim*, though entomologists have heretofore considered them harmless, or nearly so, believing that the principal injury caused by them was received on the branches of the trees when depositing their eggs. But from the fact of their burrowing into the earth the moment of their escape from the eggs, and their living, as all acknowledge, on the sap of the roots of plants, I was led to think that the constant drain of sap required to nourish so many thousands of grubs, of from a quarter of an inch to an inch in length, must be more than a tree could live through, and yield good fruit. I was confirmed in this opinion, by an experiment made by J. B. W., New-York, and published in the November number of the Horticulturist, page 227. The method prescribed to renovate an outcast, is to dig a trench four feet wide and twenty inches deep, around the tree, leaving a ball of earth six feet in diameter, and then to fill the trench with rich earth and compost. The author states that the experiment succeeded, and that in three years the tree was in a flourishing condition and yielded fine fruit. The writer attributes the change to the new and rich soil with which he supplied the tree. I argue, that on cutting off the *larvæ* of the

Cicada, which he did when he cut off so large a portion of the roots, he removed the real disease, and the tree was then in a condition to take advantage of the congenial soil placed around it; and new life was given to roots and branches. Under this impression, I superintended a similar experiment on a pear tree that had been declining for years, without any apparent cause, and agreeably to my expectations, I found the *larvæ* of the *Cicada* in countless numbers clinging to the roots of the tree, with their suckers piercing the bark, and so deep and firmly placed, that they remained hanging for half an hour after being removed from the earth. From a root a yard long, and about an inch in diameter, I gathered twenty-three *larvæ*; they were of various sizes, from a quarter of an inch to an inch in length. They were on all the roots that grew deeper than six inches below the surface. The roots were unhealthy, and bore the appearance of external injury from small punctures. On removing the outer coat of bark, this appearance increased, leaving no doubt as to the cause of the disease.

"The *larvæ* were enclosed in a compact cell of earth, with no outlet except that in immediate contact with the root, and as there were no galleries or holes leading from these cells, I infer that the grubs never leave the roots they first fasten on; which may account for the great difference of size: the small ones being starved specimens of the same brood; though I am inclined to believe that there are two species, differing sufficiently in size to account for the discrepancy in the size of the *larvæ* now found. I noticed this difference in 1817, and again in 1834: the note of the smaller variety, or species, is much shriller than that of the larger, and will never be mistaken when noticed.

The *Cicada* is too well known to need a description here ; I will therefore only notice its habits, as they have fallen under my own observation, and make a few extracts from an article published in the National Gazette, and written by my brother, Mr. THOMAS W. MORRIS, in 1834.

The eggs require forty-two days to mature in the branches of the tree ; they then burst the shell and appear, a minute but active fac simile of the parent in the larva state, except the absence of the wing cases ; they require but a few moments to stretch their limbs and prepare for labor, before they unloose their hold on the twigs on which they had been deposited, and fall to the ground, where they immediately disappear in search of food in the roots of the tree. If the eggs that are about to hatch, be placed over a glass jar filled with earth, the young grubs will, in a few hours after their escape from the eggs, be seen at the bottom of the jar, endeavoring to force their way still deeper. When first hatched, they are quite white, but soon change to yellowish brown. They exist in separate tribes, occupying different sections of country ; making their appearance in different years, but invariably after the same interval of time. For a year or two before the arrival of the main body, a few scattered individuals are generally found.

Mr. MORRIS thus describes them, as noticed by him at various times and places :

"In November, 1812, I found a large number of locust grubs under an old apple tree, between two and three feet below the

surface, having every appearance of such as now issue from the ground, and nearly of the same size. On the 27th of June, 1815, I saw a portion of one of their countless tribes west of the Alleghany mountains, extending from the summit of the Chestnut ridge into the State of Ohio, beyond Steubenville ; occupying every shrub and tree, except the pines, and the walnut, hickory, and some of the same family. On my return in the latter end of the following month, not an individual of the myriads which had occupied that space, was to be seen ; the tops of the forests, for upwards of a hundred miles, appeared as if scorched by fire. In 1832, just seventeen years after, I noticed a newspaper paragraph, which stated that the locust had appeared in that neighborhood in large numbers.

The northern parts of Pennsylvania and New-Jersey were visited by them in 1826, when I had another opportunity of seeing this extraordinary insect. On my way from Easton, through New-Jersey to Milford, in Pike county, Pennsylvania, I fell in with a very numerous body ; how far they extended, I was unable to learn, but they did not disappear from my route until after passing through a large part of Pike county, a distance by the road, of more than sixty miles from the place where I saw them on the 23d of May. Trees and shrubs are necessary as places of deposit for their eggs ; consequently, though numerous in the State House Square, none were to be found in Washington Square, which, in 1817, was destitute of trees."

J. A. K.

THE LOUDON PENSION.—The British government has given a life pension of £500 to the widow of the late John Loudon, in consideration of the great benefits conferred

on his country by his writings on rural subjects—a pension quite as worthily bestowed as those on warriors, novelists, and politicians.

DESCRIPTION OF THREE FINE WESTERN APPLES.

BY H. P. BYRAM, KENTUCKY.

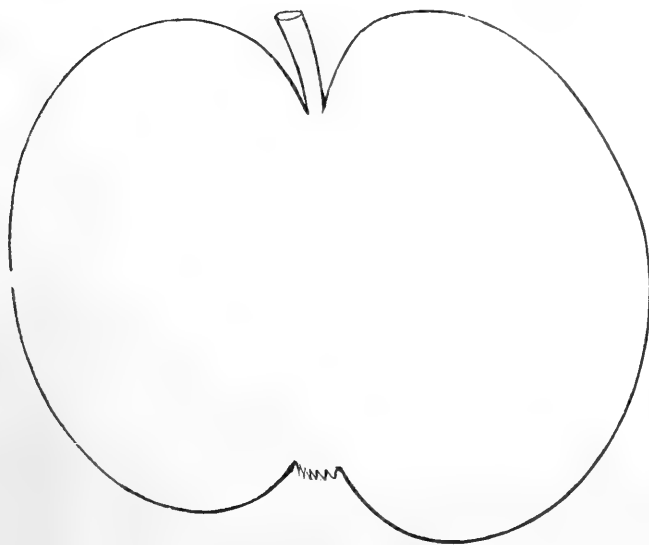


Fig. 1. Pryor's Red Apple.

been difficult to supply the demand for it.

In form, this apple varies more than many others. The outline which I send you, is from a fruit of the average shape and medium size. It is often larger. Skin brownish-yellow, slightly russeted, tinged with red, and rather indistinctly striped to within about an inch of the stalk, where it is marked with clear brownish russet. Flesh yellowish-white, of a fine, rich, and peculiar flavor, sub-acid, rather dry, and very tender (resemb-

[We are indebted to Mr. BYRAM, an intelligent Kentucky cultivator, for the following descriptions of three celebrated western varieties of the apple, which we have not previously seen correctly described.—ED.]

I. PRYOR'S RED.—No apple commands a higher price, or more ready sale, in the market of New-Orleans than Pryor's (sometimes called Prior's) Red. Probably one-third of all the apple trees sold at nurseries below Cincinnati, are of this variety; and it has hitherto

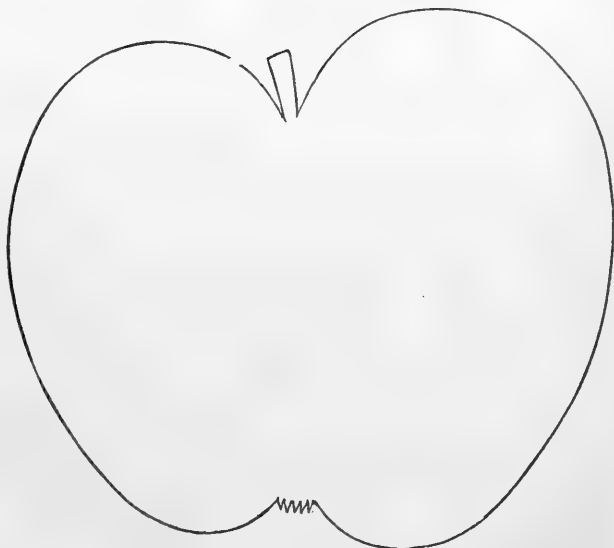
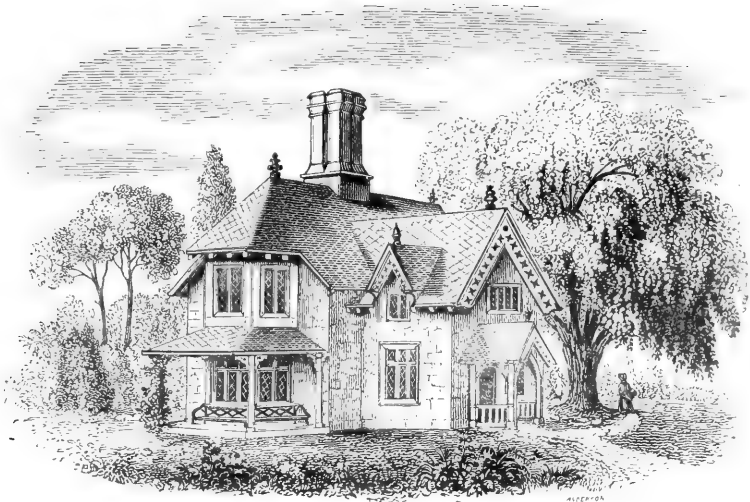
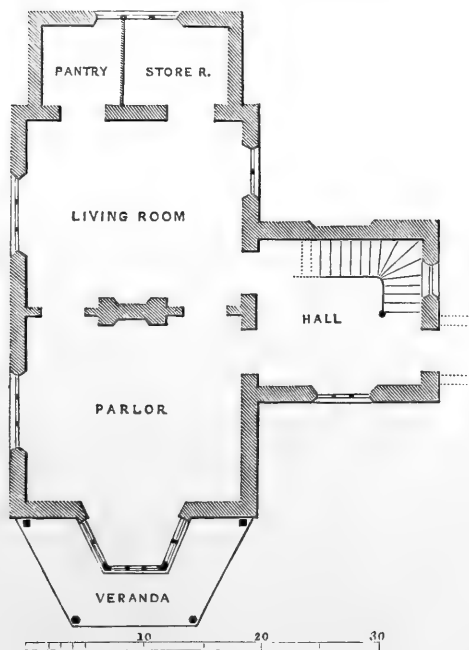


Fig. 2. Rawle's Jannett Apple.





DESIGN FOR A RURAL COTTAGE



PLAN OF THE PRINCIPAL FLOOR.

ling in texture and flavor some *pears* that I have eaten, more than an apple.) Calyx small, stalk usually about three-fourths of an inch long. Ripe from December to February.

The tree is smooth, of upright, regular growth, and bears abundant crops. While in the nursery it produces but few branches, and these are irregularly distributed; the bark is then smooth, reddish, and dotted over with white specks, not unlike the stem of a young cherry tree.

II. RAULE'S JANNETT.—A very productive and highly popular orchard fruit, of the Ohio valley. It keeps remarkably well, is in eating from December to June.* It is about medium size; skin smooth, striped with red, darker on the side next the sun, upon a yellow ground inclining to green near the stem; surface partially covered with patches of small black dots. Calyx closed, stem half inch long. Flesh yellowish, firm, tender, juicy, rather acid, of a mild, agreeable flavor.

The tree grows with a spreading head,

and a clean and smooth trunk. It possesses the remarkable peculiarity of putting forth its leaves and blossoms nearly *two weeks later* than any other apple. Hence in the fickle climate of the south and west, it escapes the effects of the late frosts, which renders it a very certain bearer.

III. YELLOW OR STRIPED JANNETT.—Tree identical with the foregoing, and also very largely cultivated. Fruit more red, and more generally covered with the black spots. It tapers less towards the eye. Flesh of a deeper red, rather tough, and less juicy, but higher flavored than the Raule's Jannett, and is considered inferior to the latter.

I met with a highly intelligent gentleman yesterday, formerly from Virginia, who stated to me that the *Raule's Jannett* was raised a seedling by one *Caleb Raules* (with whom he was acquainted,) of Amherst county, Va., near the Blue Ridge, and from the location he attributes its habit of putting out so late in the season.

H. P. BYRAM.

Brandenburgh, Meade Co., Ky., 1847.

DESIGN FOR A RURAL COTTAGE.

THE design [see FRONTISPIECE] offered in this number, is for a cottage of very moderate dimensions, in the English rural style. It is of course intended for a small family, and its merits are compactness of accommodation in the plan, and picturesque effect in the exterior.

The ground plan of the principal floor, fig. 4, shows a vestibule or hall, 12 by 14 feet, containing the staircase, and which, from its form and size, makes in itself a pretty little ante-room.

This hall opens into the two principal rooms of the cottage, viz., the parlor and the living-room, each 16 ft. by 18 ft. The size and good effect of the parlor is increased by a pretty large *bay* or projecting window, outside of which is a veranda seat. At the opposite end of the house, a small corresponding addition, one story in height, contains the store-room and pantry—both opening into the living or dining room. This cottage is supposed to have a basement story, to which interior access is obtained by stairs descending under those in the hall. It contains a kitchen under the

* The writer has kept them firm and sound until the 4th of August, but with the loss of much of their flavor.

living-room, store-room under the hall, and cellars under the parlor.

The second story contains four bed-rooms. This cottage would have the best effect if built of brick and cement. It may also be constructed very cheaply, and with very excellent effect, of the large unburnt brick now coming into use in many parts of the

country, as its wide projecting roof is well calculated to protect walls of the latter kind against damage by the weather.

The roof itself is to be covered with shingles of nearly uniform size, and cut lozenge form, so as to form diamond figures when laid, an easy and striking mode of giving an ornamental character to a wooden roof.

HINTS ON THE CULTURE OF GERANIUMS.*

BY PELARGONIUM, OF PHILADELPHIA.

I HAVE thought that a few popular hints on the cultivation of the Pelargonium, at this season of the year, will be acceptable to some of the numerous readers of the Horticulturist, from one who has long cultivated it as his favorite flower, with good success. The Pelargonium is not only the gayest ornament of the conservatories of the wealthy, at the same time, but it is no less a favorite flower in the cottage window, and where carefully grown, is scarcely surpassed in its masses of green verdure and clusters of flowers of the richest colors.

I have repeatedly felt regret, when called upon by ladies, to look at their "geraniums," at seeing plants with three or four long shoots, at the top a few leaves and ordinary flowers; and this has been the reward perhaps of one or two years of care and patience; when at the same time those who have the convenience, might have, with very trifling care and expense, from the first of April to July, plenty of flowers for bouquets, and at the same time display parlor windows decorated with the finest plants.

One of the first points for the beginner to settle is the choice of sorts: the twen-

ty-five named varieties below are distinct ones, of excellent colors, reasonable in price, and can be obtained of any respectable nurseryman: Grand Duke, Lenoxii, Arabella, Coronation, Jewess, Bridesmaid, Climax, Jubilee, Matilda, Conservative, Comte de Paris, Hebe, Nymph, Beauty of Ware, Flash, Lord Aucland, Miss Percival, Eliza, King, Rising Sun, Shrubland Scarlet, Sylph, Witch, Sidonia, Louis Quatorze. The amateur will of course require a small greenhouse to grow the plants in. The best place for it will be under a wall or building that has a full exposure to the south and east, so that the plants may have the light and sun as early as possible in the morning. A green-house of the small dimensions necessary to grow an excellent private collection of these plants may, in such a place, be put up, if very plainly built, at a trifling cost. I will suppose it to be twenty feet long, twelve broad, at the back part ten feet high, at the front five feet, inside measure. In a house of these dimensions, there would be room for a stage having six steps, each step fourteen inches broad, the highest being four feet from the glass, and the rest descending so that each

* Strictly Pelargoniums—the division of this class of plants popularly known as Geraniums.

is eight inches below the other. The walk should be three feet broad, and a small front level stage over the flue should be two feet broad; this stage being two feet from the glass, would be a convenient place for a few *calceolarias*, *cinerarias*, or other plants that require the same treatment as the *Pelargoniums*. In propagating the various varieties, it will be found that a *spent hot-bed* is the best place in which to plant the cuttings. They may be taken from the old plants any time during the months of April or May. After planting them in the soil of the old hotbed, they should be well watered and kept shaded during the day. As soon as they are well rooted, which will be in a few weeks, pot them into four inch pots, in sandy loam, place them on the front stage. The most important point now is, the *pinching off the ends of the shoots*, so that the plants will make plenty of side shoots. This attended to, gives fine round bushy heads; neglected, gives lean, starved trees. Water the plants only moderately in winter. In March, when the plants begin to grow, pot them into six inch pots, in rough rich loam—that made of old pasture sods, well rotted, is the best. In May take the young shoots off for cuttings, treating them as I have already mentioned. Whenever you observe any tendency to long, unsightly branches, correct it by pinching off the ends of the shoots, so that the plants will be bushy. The plants in the pots should be allowed to remain in the open air all the summer, in a somewhat shaded as-

pect, and not plunged in the ground, but set upon a floor two or three inches thick of coal ashes. They should be put into winter quarters before the season of the first frost. During the winter keep the house moderately cool, and the plants rather dormant. About the first of March, begin to keep your house warmer during the night, giving plenty of air every favorable day. When the plants begin to grow finely, put them into eight inch pots, with plenty of drainage at the bottom (bits of charcoal are the best drainage;) and the plants, if well grown, will require no tying up to stakes, but the lowest branches will fall gently on every side, half concealing the pot, and forming rich bushy masses of green leaves. Plants in this condition may be allowed to bloom all the buds they will form.

The house once a week should be fumigated with tobacco, to destroy the green fly. Syringing over the leaves in the morning, will greatly add to the health and luxuriance of the whole collection.

Those who do not possess a green-house of any sort, may, with the aid of a couple of hot-bed lights and frames in which to strike the cuttings, and by following the simple hints I have thrown out, grow a sufficiency of specimens, much more compact and robust than are usually seen, to adorn the parlor, plant stage, or the windows of any well lighted apartments, free from frost and not too warm.

Yours,

PELARGONIUM.

Philadelphia, 1847.

PEACH CROP.—It would be an interesting statement to know how often the peach crop fails, on the most favorable sites, in different parts of the country. The opinion of H. N. Langworthy, a very successful

peach raiser of Rochester, as stated in the *Genesee Farmer*, is, that there is not an entire failure oftener than once in ten years, in Western New-York, or between Lewiston and Sodus bay, on Lake Ontario.

NOTES ON THE STRAWBERRY QUESTION.

BY N. LONGWORTH, CINCINNATI, OHIO.

DEAR SIR — The strawberry question at this time gives me little trouble, as the strawberry committee of our Horticultural Society have the subject in charge, and they all have botanical knowledge, joined to personal attention to the cultivation of the fruit; and they will have ample opportunity the present season, thoroughly to sift the last strong hold of the learned botanists, that "there is a third class of plants, having all the blossoms perfect in both male and female organs, and bearing a full crop of perfect fruit; and that pistillate plants become staminate by running." [No; that some perfect blossomed sorts have a tendency to vary into barren forms.—ED.] Among these, are ranked the Boston Pine, Downton, Swainstone Seedling, Keen's Seedling, Ross' Phœnix, Buist's Seedling, Emperor, Myatt's Pine, Wilmot's Superb, British Queen, Grove End Scarlet, Burr's old Seedling, and many others. Keen and Wilmot made fortunes by their seedlings, yet not one of the whole class, is possessed of any value with us, further than as an impregnator. A perfect plant, except of the White and Alpines, I never expect to see. I have this season, thoroughly tested this strong hold. I obtained the Swainstone and Ross' Phœnix from you. Neither of them will, in an average of years, under any cultivation, produce perfect fruit, on one-third of the blossoms, and a large portion will be entirely defective in female organs, and entirely barren. The fruit of the Swainstone, as far as it bears, is of the largest size. A plant is occasionally produced, with blossoms on the same stem, wholly defective

in male organs, and the residue more or less perfect in both organs. In cultivation, I have seen one only, the Duke of Kent, that bears a full crop. The fruit of this plant is small.

A seedling may be produced, of this character, from the seed of a large fruited variety, of great value, and I would recommend persons to turn their attention to the subject. *Eberlin's Seedling*, (a new western sort,) is of this character. Such a plant could not be called a PERFECT plant; yet it might produce a full crop of fruit, as the pistillates would be impregnated by their staminate neighbors, on the same or adjoining stem. The great advantage would be, that in planting staminates with pistillates, the former increase so rapidly, having no fruit to bear, that they soon crowd the pistillates out of the bed.

About the true character of the strawberry plant, we shall no longer dispute; and our only surprise will be, that our horticulturists could have raised seedlings, and have cultivated them for years, for sale, and be totally ignorant of the true character of their own progeny. Our intelligent friend BUIST, of Philadelphia, required but a single season, after his attention was drawn to the subject, fully to understand and admit my propositions. I name this, that those who still want faith may be led to seek the truth. One cause, why you at the east are so slow of belief, is, that you are seldom willing to be instructed from the backwoods. Yet here is the very place where you should look for new discoveries in agriculture and horticulture. You are slow in changing long settled opinions. You

rely on books, more than personal observation. In these benighted regions, as few of us can read, we are compelled to rely on observation, and consequently form new opinions, and may possibly occasionally get the start of book learning. LINNÆUS told you, "the blossom of the strawberry plant is always perfect, in both male and female organs, and occasional failures in blossoms to bear fruit, are the consequence of a late frost." Botanists have never given the subject personal observation, and have repeated the same doctrine. Most of those who attend to the cultivation, have no botanical knowledge. Finding their plants become barren, they neglect them. And so wedded are many to old theories, that even where they raise seedlings for sale, they cannot be made to believe, that *pistillates* would not, in a thousand years, produce a single perfect fruit, if separated from all others; and that *staminates* will not, in an average of years, bear one-third of a crop. The rage now is for new fruits and flowers, and our horticultural societies will be of little value, till they promptly examine all new plants, and report on their character and value. It would, to the community, be a great saving of time and labor. The course of our societies is the reverse of this. "A hasty plate" of new seedling strawberries is sent them. They "hastily" report, not only on their size and quality, but their bearing character. True, they occasionally make small mistakes. Persons in sending JAKES' and MOTTIER's seedlings to one of your societies, omitted to send any sugar. They were "hastily" reported sour and worthless. Not satisfied with this cut-throat decision, Mr. JAKES sent a second plate, and added sugar; and they were reported as "first rate." MOTTIER was in the backwoods, and had not time to send sugar, and the doom of his

seedling is sealed. Yet his seedling is of superior flavor, being from the old Hudson, and not readily distinguished from it. Fifty years ago, scarcely any other was known in New-York and Philadelphia; and in flavor, where sugar is plenty, it has no superior. It has always been considered the best market strawberry. One of our nurserymen lately imported for sale, one of your perfect eastern seedlings, that will not average one-fourth of a crop of perfect fruit. I expostulated with him. His reply was, "I know it is worthless, but my customers will have it, as it is vouched for by eastern horticultural societies."

We shall soon know what improvement, if any, can be made in raising new varieties of strawberries from seed. Some of our intelligent horticulturists are extensively engaged in it, as a matter of amusement. But little has, in my opinion, been done, either in Europe or America, with the exception of Hovey's Seedling. This, thus far, stands unrivalled for size. A new seedling, raised in this city, by Mr. TAYLOR, as far as I can judge from a single season, ranks next to it. It is purely pistillate, though supposed by him to be perfect. One of my tenants, Mr. AVON, a gardener of long experience, has upwards of one thousand seedlings, principally from seed of the largest fruited staminates; a portion of which are now in fruit. Their present location is in poor soil. They promise to rival the Hovey in size. Yearly, large sums are expended in importing and extending the cultivation of new fruits. We yearly import new seedling strawberries from England, that are highly praised and extensively spread through the country, that prove to be of no value. We are then told, they do not suit our climate. They should be scarce in any climate. Would it not be advisable for every horti-

cultural society, to have a fruit committee, whose duty it should be to examine all new fruits, and report on their quality and bearing character?

I have said that the English staminate strawberries, (or rather what are erroneously called perfect plants,) are of no value in the United States, except as impregnators to pistillates. I say this, in complaisance to our English gardeners, who now admit their staminates are bad bearers in America, but contend that in England all the blossoms were perfect in both organs. In this, they mistake. In the cool climate of England, staminates may bear better than with us. But what confirms me in my opinion is, that some English gardeners east, who forced the Keen seedling about Boston, assured me that, with them, it bore a full crop. They will not know what a full crop means, till they visit the strawberry grounds of Mr. CULBERTSON, and in a favorable season, see him pick *one hundred and twenty bushels in a single day*. Mrs. LOUDERBACK, who sells large quantities of the fruit, and also preserves it, observed to me, that she saw more strawberries in a single day, for sale in Cincinnati, than she saw in Philadelphia during a season. That she there, for the largest size for preserving, paid fifty cents per quart. It is never safe to speak of the bearing character of what you term perfect plants, from a single year's experience, as the blossoms throw out the pistils some seasons much better than usual. For it is in pistils they are defective. Never in stamens.

You may, within the next five years, expect a great reduction in the price of New-ark cider, turneps and green corn, (the rudiments of a good deal of champagne sold in this country.) By that time, there will be numerous establishments in our city for the manufacture of champagne

wine, from the juice of the grape. And it will possess a high character, and command a high price, if we can overcome the impression, that no part of the United States is a wine region, and do not follow eastern examples, and also manufacture from cider, turneps and green corn. The cultivation of the grape, is rapidly extending in this vicinity; and our German vine dressers must exert all their care and skill. If they do not, from present appearances, some of our American grape growers will surpass them in the quantity of wine made to the acre, and its quality.

Yours, with regard,

N. LONGWORTH.

Cincinnati, O., May 29, 1847.

MR. LONGWORTH's letter is interesting to us, mainly because it is more definite than usual, about the classes of strawberries.

He says, "the English staminate strawberries, (or rather those erroneously called perfect plants,) are of no value in the United States, except as impregnators to pistillates." Leaving out the English *White* and *Red Woods*, and the *Alpines*, which, we believe, our correspondent admits to bear perfect blossoms, this divides all other strawberries into two classes, viz: those bearing purely *pistillate* blossoms, such as *Hovey's seedling*, (as generally known,) *Black Prince*, *Hudson*, etc.; and those with *staminate* blossoms, i. e., containing stamens, more or less abundant, as well as pistils.

What we have hitherto meant, when using the term *staminate*, is a strawberry blossom in which the stamens chiefly are developed, and the pistils only imperfectly. And we have called those blossoms *perfect*, in which the normal proportion of pistils and stamens is preserved, such as the *Duke of Kent*, *Early Scarlet*, *Alpines*, *English Woods*, etc. We used these terms, because

experience has taught us that at least all these sorts are permanent in the habit of bearing blossoms of the same character, and good crops of fruit.

Besides this, we are pretty well satisfied, from careful observation, (and not from theory,) that many of those kinds of Pine strawberry, (such as *Keen's Seedling*, *Ross' Phoenix*, etc.,) originally bearing blossoms perfect in their proportion of stamens and pistils, are more or less liable to become unproductive by running out, or varying from their original form. Still more recent examination of the subject, leads us to think that this variation usually consists in the *pistils* becoming abortive or imperfect.

This tendency to variation renders these stamen and pistil bearing varieties (staminates of Mr. LONGWORTH,) much less certainly to be depended on for a crop than those varieties, the blossoms of which bear only pistils—*pistillate* sorts.

So far, Mr. LONGWORTH and ourselves differ so little, that the difference is of no practical value.

When, however, he says that no staminate sorts, as for example, *Keen's Seedling*, *Ross' Phoenix*, *Swainstone's*, etc., will ever bear good crops, we must be allowed to dissent, because we, as well as thousands of other cultivators, have often seen very fine crops of these varieties.

Mr. LONGWORTH says truly, that KEEN, and other noted English market growers of the strawberry, have made fortunes by these sorts. Every one knows that "*Keen's Seedling*," (a fine old variety that in our climate is not so productive as abroad, because the pistillate portion of its blossoms

often becomes abortive,) has held its place in Great Britain at the head of all strawberries for general culture, for the last fifteen years. It is as evident, as that 2 and 2 are 4, that the English, who are by no means novices in gardening, would not cultivate for market, year after year, sorts that do not bear one-third of a crop; and that a "barren staminate" sort, like *Keen's Seedling*, would not hold the first rank against dozens of new sorts raised and disseminated every year, if it had not *productiveness* among its characteristic qualities.

On the other hand, and this is the real pith of the matter, when Mr. LONGWORTH says that *pistillate varieties* of the Pine strawberry, properly cultivated, yield far larger and more certain crops than any others, he is undoubtedly quite correct. This is the great practical turning point of the Cincinnati mode of strawberry culture, made public by Mr. LONGWORTH. It is not that the English growers, or staminate sorts, do not produce good crops, but that the Cincinnati growers, and their mode of choosing only *pistillate* sorts, (with a small proportion of stamen bearing plants near by,) always give *enormous crops*—far exceeding any hitherto grown. The fact that the market of Cincinnati was last year supplied with about *four thousand bushels of strawberries*, at an average of six cents a quart*—the largest and cheapest supply known in any city in the world, is the best evidence of the extraordinary result of their mode of rejecting all but pistillate sorts—with a small admixture of the staminates to fertilize them.—ED.

* We learn that it is judged the total amount offered in that market this year will exceed 6,000 bushels!

DESCRIPTIONS OF TWO FINE NEW AMERICAN APPLES.

THE number of native apples of good quality and local reputation, is increasing so rapidly, from the very great adaptation of our climate and soil to this fruit, and from the great number of seedling trees that have been planted in orchards in all parts, that the result is one almost perplexing to the collector.

With the large variety of apples of high excellence, already in cultivation, it is the duty of pomologists to exercise a more than usually severe scrutiny, and judge from a high criterion, in admitting into general cultivation more new sorts. However valuable certain varieties may be esteemed by those not familiar with *the best*, it is evident, that at the present moment, we want no more new apples of second quality. All candidates for the critical favor of the pomologist, and the general acceptance of the cultivator, ought to possess the aggregate of qualities that belongs to fruits of the first class only.

Among the great number of new sorts that have come under our notice, within the last two years, we have found very few indeed, so fully entitled to high praise as the two varieties we are now about to describe.

I. THE McCLELLAN APPLE.

Martin Apple, of some.

A beautiful and most excellent dessert apple, a native of Woodstock, Connecticut. It is remarkable for its beautiful and regular form, its

fair and smooth skin, the delicacy and excellence of its flavor. Compared with many of the finest *dessert* apples, it will be found superior to most of them, and worthy of a place, therefore, in every small collection; while its regular and great productiveness also renders it highly valuable as an orchard apple.

Fruit of medium size, unusually regular and round in shape. Skin very smooth, nearly covered with stripes and marblings of lively red, on a bright straw-colored ground. Stalk short, and rather slender, not very deeply planted in a very smooth, round cavity. Calyx short, nearly closed, set in a basin of moderate depth, and very slightly plaited. Seeds small. Flesh white, fine-grained, very tender and juicy, with an exceedingly sprightly, mild and agreeable flavor—scarcely sub-acid. Season December to March.

This fine native fruit was first presented

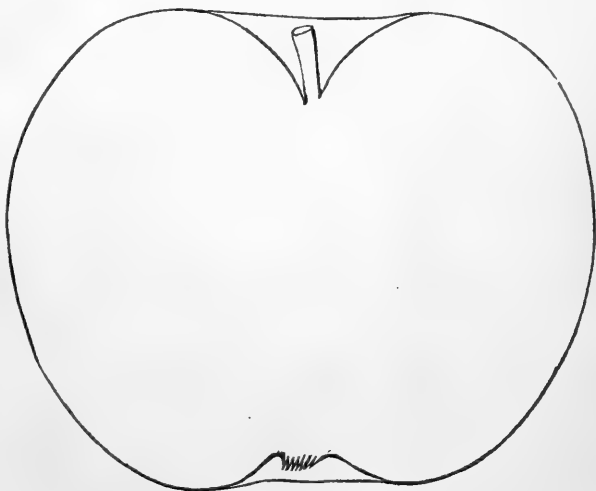


Fig.5. The McClellan Apple.

to our notice, a couple of years ago, by the Rev. H. S. RAMSDELL, of Thompson, Connecticut, an enthusiastic cultivator of fruit. We also received specimens again last autumn, which we kept till March. Mr. RAMSDELL informs us that the original tree, now dead, stood upon a farm in Woodstock, Ct., in the midst of a "cider orchard," all seedling trees. This orchard was planted about 70 years ago, but it is now uncertain by whom, as the property changed owners several times. One of the owners, Mr. JOHN MARTIN, about thirty years since, presented grafts of the apple in question to his neighbor, Major JOHN McCLELLAN. With these grafts, the latter immediately produced a young tree which has been in constant bearing twenty years, and is the oldest tree of the kind now in existence. Very soon after Mr. MARTIN presented the variety, as something worthy of cultivation, to Major McCLELLAN, he sold the farm on which the original tree stood, and it was cut down by the purchaser.

"Major McCLELLAN," as Mr. RAMSDELL informs us, considers this variety as good a bearer as the *Rhode Island Greening* and *Roxbury Russet*. Indeed in his soil "it has borne good crops in seasons when these varieties have failed. I have also carefully watched it for the last few years, and find that it gives crops of fine

fruit when the usual apple crop is exceedingly small. Major McCLELLAN has a number of small trees, each of which bore from one-half a bushel to a bushel last year, which proves that it also comes early into a productive state. The fruit is now known and much sought after here, as the '*McClellan Apple*,' and taking into account its beauty, size, flavor and productiveness, I do not know its equal among apples of the same season. The trees in the nursery are of moderate growth."

II. THE HAWLEY APPLE.

A remarkably fine autumn apple, a native of Columbia county, N. Y.; large, handsome, productive, and among the finest flavored autumn varieties that we have yet tasted. It perhaps more nearly resembles in flavor that fine old apple, the genuine "Fall Pippin," than any other, though quite distinct in appearance, and more productive in the orchard.

Fruit large, roundish, and varying in out-



Fig. 6. *The Hawley Apple.*

line in different specimens, from a slightly flattened form to one somewhat conical. Its surface is smooth, and slightly oily; the core is large and hollow, in which the seeds rattle. The skin is pale yellowish-green at first, becoming pale golden yellow at maturity, and sprinkled with a few scattered brown dots. Stalk slender, from three-fourths to an inch long, planted in a deep and wide cavity, (from which often extends a faint mark or line each way, halving the fruit,) Calyx rather small, partly closed, set in a slightly plaited basin of moderate depth. Flesh yellowish-white, fine-grained, tender, with a rich sub-acid flavor. Season, October and November. The tree is of moderate growth in the nursery, but in the orchard forms a well shaped, spreading head, and bears good crops annually.

Gen. E. W. LEAVENWORTH, of Syracuse, N. Y., had the kindness, last autumn, to make us acquainted with this valuable fruit, which is now rapidly becoming a favorite in this State. In a letter from him, now before us, he gives the following authentic account of its origin:

"The *history* of this tree, is substantially as follows:

"MATTHEW HAWLEY removed from Old Milford, in Connecticut, to New-Canaan, in

Columbia county, New-York, nearly a century ago. As usual, at that time, with emigrating settlers, he took with him *apple seeds*, from which he raised and planted an orchard of seedling trees on his farm, in Canaan. Among them, was the tree in question. The farm afterwards passed to his son DANIEL, and is now owned by THOMAS HAWLEY, the son of Daniel Hawley. The fruit early attracted the attention of amateurs, and for forty years past, it has been more or less propagated, both there and elsewhere.

"It is now cultivated near Canaan Four Corners, by Messrs. THOMAS HAWLEY, EDWIN B. WILLIAMS, JAS. HAMILTON, and various others, as well as by several orchardists in Onondaga and Cayuga counties. The original tree has been dead some ten or twelve years.

"I am informed that the trees grow large and strong, and bear abundant crops every year.

"A person named DOUSE, lived on a farm near Mr. HAWLEY's, some forty years since, and had one or more of these trees on his farm, taken from the Hawley tree. Hence the name of Douse, or Dow's apple, which it bears in some places.

Your ob't servant,

E. W. LEAVENWORTH."

ARBORICULTURAL GOSSIP.

BY J. JAY SMITH, PHILADELPHIA.

I AM delighted to see influences from the most influential quarter—a journal with the circulation of the *Horticulturist*—brought to bear on the tree-planting taste of the country at large. I know that just now almost the whole country is alive with or-

chard and fruit garden planting—and that fruit trees are the theme that occupy the great mass of horticultural readers. This, however, is only the necessary first step, and the extensive collection and planting of all fine and rare ornamental trees, Cedars

of Lebanon, Araucarias, and the like, will as surely follow as the blossom follows the bud.

With all our truly fine sylvan scenery, there are none of your readers, who have not seen the thing for themselves, that know how properly to rate the enjoyment of those collections of fine ornamental trees which the English make at their country places, under the name of *ARBORETUMS*. It is for a country residence, what a *museum*, or rich collection in natural history or art, is for a town house; a source of interest perpetual and unvarying. Many a person (and there are, I am sorry to say, such in all countries,) to whom trees are only *trees*—that is, green things in the landscape, in which they perceive little distinction—are immediately struck and interested in a country place by an *arboretum*—that is, a collection of trees properly arranged on a large lawn, each genus, with all its varieties, near each other, so as to show off their contrasts and individualities to the highest advantage. Such a park or lawn soon seizes upon the mind and attracts it; almost insensibly one is led to compare forms and developments; and very quickly he who knew little and cared less about trees, finds himself acquiring the acquaintance of the *most distinguished botanical families*!

I know very well that my impatient countrymen, ever berating time for the slowness (!) with which his wheel revolves, plant Paulownias, Ailanthus and Silver poplars, that grow ten feet in a year (and are pigmies, after all,) more willingly than Cedars of Lebanon, that grow only a foot in a season, and become giants at last. But the number of patient ones will only increase with the gross number of planters. In the mean time, those who begin first will

be the first to lay the foundation for great results.

We know little of the matter of arboricultural taste in the United States. In England it is carried to a perfect passion. Not only entire collections are made in certain places, but, in many places, particular genera of trees are chosen, and every known species of interest being assembled, one sees the whole beauty of that class of vegetable forms, more thoroughly than in any other spot in the world. And again, every planter will not have space for a world's park-collection, but may be able to exhibit a single family of trees, or one genus at least, in all their beauty and perfection. Thus we see in England *Thorneries*—collections of all the known kinds of Hawthorns; *Pinetums*—assemblages of every procurable member of the *pine* family, etc.

Perhaps the most celebrated *Pinetum* in the world, as you know, is that at *Dropmore*, a few miles from Windsor Castle, the seat of the late Lord GRENVILLE, by whom it was commenced—the design having been pursued to this day by his enthusiastic widow, LADY GRENVILLE. It was one of the places which, with my own *penchant* for trees, I most desired to see, and therefore one that I did not fail to visit, when I was in that country, in 1845.

It would be quite impossible for me to give your readers, in my present brief space, any correct idea of the very extraordinary wealth of LADY GRENVILLE's place in trees. There are, in the first place, grand and gigantic beeches and oaks, several hundred years old, huge, gnarled, and picturesque to the highest degree. Then there is a great *double avenue* of immense Cedars of Lebanon, such as almost lift a genuine tree-lover off his feet, with their majesty and beauty.

But the *Pinetum* at Dropmore, is the glory of the place. It contains one or more specimens, in groups, of every cone-bearing tree that will endure the climate of Great Britain—one, on the whole, more favorable to the fir and pine tribe, than any other in the world. I send you a list of all the species of trees in this *Pinetum* [which we regret to be obliged to omit for want of room—ED.] amounting to about 170 distinct species. Of course, among them are the *Araucaria imbricata* and *Deodar cedar*, the two largest specimens in Europe. The great *Douglass Pine*, of California, which grows in Western America to the height of 300 feet, has here already reached 45 feet. It is one of the most striking and beautiful vegetable productions I ever gazed upon.

The site of this *Pinetum* was, I was told, originally an old wet moor. It is now the site of a perfectly fairy garden, and the most superb lawns.

We have but little idea in this country of the perfection of the English gardening—and I may say, especially *tree culture*. I saw, while at Dropmore, something in this way, that both amused and instructed me. One or two of the trees in the *Pinetum* were perhaps a little less luxuriant than the rest, though by no means unhealthy. But it was playing the laggard, and the gardener, who had caught it napping, was bringing it to reason by a little extra feeding.

His proceeding was a good deal after this fashion: Finding out in exactly what direction each large root radiated from the main centre, he carried out the radiating line on the surface of the ground, say thirty or forty feet from the trunk, on all sides. Beginning at the outer ends of these lines—shooting out like the spokes of a wheel, 40 feet from the tree—he opened trenches three feet deep towards the tree, till he reached the spot where he met the

ends of the young roots. This course was pursued all round the tree, at spaces of a few feet apart—or wherever it was seen that a set of roots extended. These trenches were soon cleared of the common soil, and filled with rich compost and “maiden loam.” This, I was told, and I could not doubt it for a moment, would soon bring the tardy tree to a state of luxuriance quite equal to that of any of its neighbors. But how many persons in this country would have dreamed of laying down whole *canals and feeders* of nourishment for the roots of a favorite ornamental tree! Yet if luxuriance is beautiful, and rapid growth desirable, the trouble is not thrown away.

But a word about home arboriculture. There are in the environs of this city, as I have had the pleasure of pointing out to you, many instances of good taste and zeal in the planting of rare and fine trees, that are worthy of being seen and chronicled. I must send you, from time to time, as I have leisure to measure them, the accurate dimensions of some of the most striking trees now existing about Philadelphia. At present I can only give you the following, which have been measured very recently, and especially to show your readers what has been done at home.

VIRGILIA. (*Cladastrus tinctoria*, Torrey & Gray.) There is a very noble specimen of the Kentucky Virgilia (*V. lutea* of the old botanists,) in the grounds of Mrs. PRICE, near Germantown. Its height is 46 ft. 8 in. Its stem measures 6 ft. 7 in. in girth at the ground, and 4 ft. 1 in. at six feet above the ground.

TREE BOX. (*Buxus arborescens*.) The great Tree Box on Judge PETERS' place, about three miles from this city, measures 33 ft. 6 in. in height, and is 5 ft. 4 in. in girth at six inches from the ground. It there forks into four limbs, the largest of

which, at eighteen inches from the ground, is 3 ft. 1 in. in circumference. This is the largest box tree I have ever heard of. In the same grounds is the WASHINGTON CHESTNUT. This celebrated tree is of the large fruited variety, planted by Washington. Its dimensions are, height 52 ft. 4 in.; circumference 10 ft. 1 in. A BEACH tree near by, one of the finest and most graceful ones I ever saw, measures 87 ft. 6 in. in height, and 7 ft. 2 in. in girth.

MAGNOLIA GRANDIFLORA.—A specimen of this fine evergreen, now growing in the

grounds of Laurel Hill cemetery, where it was removed from the McArran's garden, measures 17 ft. 4 in. in height; 13 inches in circumference at the ground.

More accounts of our fine arboricultural specimens in my next.

Yours, very truly,

J. JAY SMITH.

P. S. My *Virgiliu* trees are this day in superb bloom. Why is this most beautiful hardy western tree so rare? [Why, indeed? We know nothing of the kind more charming than this fine tree.—ED.]

THE NEW JAPAN LILIES.

BY THE PRESIDENT OF THE MASSACHUSETTS HORTICULTURAL SOCIETY.

THE LILY, from time immemorial, has been the theme of the poet, and the subject of sweet allusions by men of taste and learning; frequently and beautifully is it referred to in the Scriptures, for its exquisite fragrance and loveliness, and for *magnificence*, Divine authority has declared "that SOLOMON, in all his glory, was not arrayed like one of these."

It is not my purpose, at present, to inquire whether the species or variety thus sublimely spoken of, was the *Lily of the Valley*, belonging to the genus *Convallaria*, as some have supposed; the *Lilium candidum*, of Pliny, or the splendid tribe with which this chapter is introduced to the notice of your readers.

Of the many remarkable plants imported into Europe, within the last half century, few can claim such a pre-eminence for beauty, as the Lilies discovered by Dr. VON SIEBOLD, during his researches in Japan, in the years 1831 to 1833; and it is no exaggeration to state, that none have since been

introduced, more deservedly popular, or more highly attractive.

Dr. VON SIEBOLD informs us, in his *Flora Japonica*, that he brought with him, from Japan, more than twenty kinds of Lilies, the most conspicuous of which, however, are the *Lilium speciosum*, (sometimes called *rubrum*), the *L. lancifolium album*, and the *L. lancifolium punctatum*, or *roseum*. All these have reflexed petals, and may be briefly described as follows:

LILIUM SPECIOSUM.

Showy Crimson Japan Lily.

Flower, ground color, clear rose, shading to white, covered with numerous small projections of bright crimson, and which gives it the appearance, as Dr. LINDLEY remarks, of being "all rugged, with rubies and garnets and crystal points;" a plant of two to three feet in height.

LILIUM LANCIFOLIUM ALBUM.

White Lance-leaved Lily.

Flower, pure virgin white, crested with the same peculiar projections as the former species, but these are without color, and

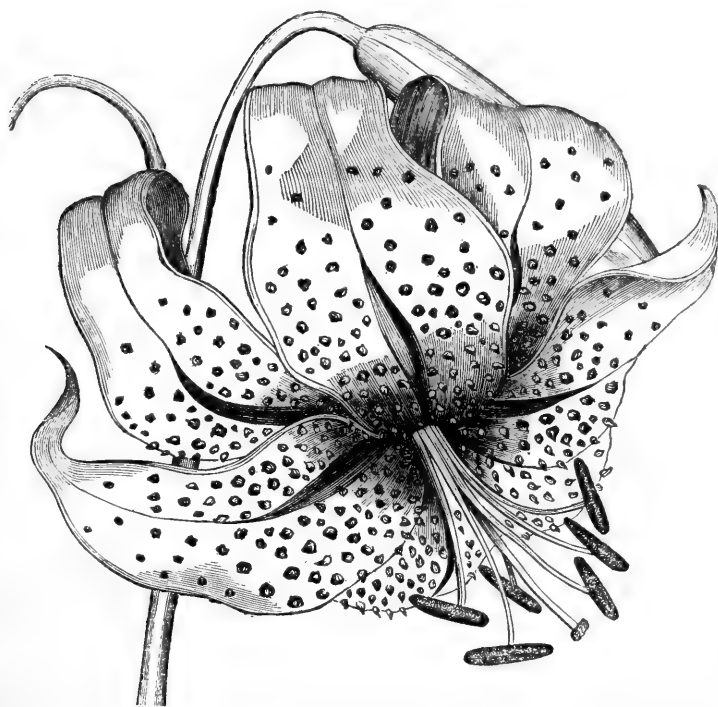


Fig. 7. *Lilium speciosum*.

which may be compared to frost work and snowy stalactites; grows to the height of three or four feet.

LILIUM LANCIFOLIUM PUNCTATUM, OR ROSEUM.

Spotted Lance-leaved Lily.

Flower large, white; the petals studded with pale rose or blush projections, and beautifully spotted with rose-color. The plant is of more robust habit than either of the sorts named above, often attaining to the height of four or five feet.

The virgin whiteness of the *album*, the roseate leopard-like spotting of the *punctatum*, and the jewel-like brilliancy of the *speciosum*, all redolent with the fragrance of Arabian spices, will ever render these, objects of especial favor and admiration, and place them among the very choicest plants of the conservatory or flower garden.

Hybrids—The strong development of

the stamens and pistils of the Lily tribe, almost directly invites the skill of the cultivator to cross impregnations. A multitude of seedlings have been produced in this way, from these Japan Lilies. In my own collection, I have now about 150 in bud, from which it is hoped some good and distinct varieties may be obtained. Of the seedlings that have already bloomed, those raised from *L. speciosum*, fertilized by *L. L. album*, and from *L. L. album*, by *L. speciosum*, have been almost identical in character with the former red species, varying only in the petals displaying a clearer delineation of the white. All efforts to interbreed these sorts with *Lilium candidum*, (common white Lily,) *L. tigrinum*, *L. Philadelphicum*, *L. superbum*, and *L. Canadense*, have proved abortive.

Soil.—In cultivating these new Lilies, the following soil will be found thoroughly adapted: Two parts from an old hot-bed, composed of leaves and horse manure, at least two years old; one part rotten sods, or any good mellow loam; one part sandy peat; [if not sandy, it will be well to add a little sand.]

Potting and shifting the bulbs.—About the middle of January, these will commence vegetating, when they should be potted in small pots, repotting or shifting them to a larger size, every two months, or as often as the pots are filled with roots—always remembering that perfect drainage, and plenty of it, are indispensable to success.

Propagation.—By *seeds*, which are obtained in abundance in this climate, if the pistils are fertilized. These should be sown as soon as ripe, in shallow pans, in which they may remain for one or two years; they should then be transferred to six inch pots, four to six bulbs around the edges of the same—and finally, singly, in pots for flowering.

By *offsets and by young bulbs.*—These are formed at the crown of the old bulb, and also at the axils of the leaves. Their growth is accelerated by the placing of pieces of peat around the stem.

By *scales*, from the outside of the bulb, potted in peat and sand, and subjected to a slight heat; these do not vegetate rapidly, but eventually make good bulbs, and those scales may be divided longitudinally into two or three parts, with the knife, each one of which will form at the bottom a new plant.

Hardiness and adaptation to the open ground.—That the Japan Lilies and their offspring, may become tenants of our gardens, and sufficiently hardy to endure our climate, is much to be desired. The scar-

city and high price of these have, until recently, been a hindrance to much experience in this respect. I can, however, state some facts, which give great reason to expect that they or their hybrids will prove so. Soon after the introduction of the *L. speciosum*, a bulb stood the winter perfectly well, protected only by a pot, in the garden of a gentleman in this city—and I learn that one of the same sort has, for two or three years, remained uninjured in a garden in the city of New-York. My own experience is quite encouraging. Eighteen bulbs were planted in the open ground last November, in a bed of Tree Pæonias, between the rows; these were covered with four inches of peat, and when the ground closed up, about the same depth of seaweed was added to the covering; *every bulb* is alive, and now making a vigorous growth. It is sufficiently evident, that if the Japan Lilies prove hardy, their culture in the open ground, and in a deep rich border, will be of the easiest description.

General treatment.—I am now supposing the course of in-door culture. The dormant bulbs having been potted, they should be placed in a forcing pit, with a little gentle heat, removing them as near to the light as possible, as soon as the leaves begin to unfold themselves; water must be given sparingly during the first period of growth, or until new roots have been formed; after which, it may be administered plentifully whenever the surface of the soil becomes dry, remembering the good old rule, that the supply of water must always be in proportion to the supply of solar light.

A flue in the green-house will do very well, provided the pots are kept constantly moist. In the early stages of their growth, a warm, humid atmosphere is particularly favorable to a vigorous start; this will be

seen by the mesh of white roots emitted on the surface of the soil, and which, with those below, are the greedy recipients of any reasonable quantity of richness that may be administered in the form of liquid manure or guano; under these influences and judicious shiftings of the bulbs to larger pots, the luxuriance is truly astonishing, strong bulbs throwing up thick, robust stems of three to four feet, covered with a dense white bloom, alike significant of the adaptation of the soil and temperature in which they delight to revel.

When the flower buds are developed, the Lilies should be removed to the temperature of the green-house, the nearer the light the better. The bloom being past, the plants should be watered more sparingly, and when a disposition for dormancy is evinced, by the waning yellow foliage, this may be entirely dispensed with—the stalks cut down, the pots removed to the potting bed, or a place where they are dry or protected against frost, there to remain until the appropriate season for recommencing operations. In this state of rest, the bulbs should not be taken out of the pots, but it is well to examine them once a month, and if very dry, to give them a *careful* watering. Of the ultimate hardiness and adaptation of the Japan Lilies and their offspring to our gardens, I intend to satisfy myself, by experiments, the ensuing year.

Yours,

M. P. WILDER.

Boston, June 10, 1847.

REMARKS.—We are greatly indebted to Col. WILDER, for the foregoing excellent practical notes, which he has given our readers, regarding the Japan Lilies—perhaps the finest of all the present floral novelties of the day.

Col. WILDER has, we believe, the largest collection of these Lilies in the country, having not only been among the first to introduce them, but also equally successful in their cultivation. We had the pleasure of seeing some of the cross-bred seedlings raised by him, at an exhibition of the Massachusetts Society, which were, if possible, more beautiful than any of the original species; and we anticipate, among those of his own production, now about to bloom for the first time, some varieties of great delicacy and brilliancy.

We understand that the Japan Lilies produce seed more freely in the United States than in European gardens. It is also not a little remarkable, as we believe there is no parallel to it in Europe, that all the hybrids produced by Col. WILDER, that have yet flowered, have a strong resemblance to the rarest and finest species—*Lilium speciosum*.

We have only to add our testimony, from experience here last winter, that these Lilies have proved hardy in the open border, with a slight covering of earth only; and there can scarcely be a doubt that they will soon take their place among the loveliest ornaments of the parterre.—Ed.

INVIGORATING FRUIT TREES.—The papers often contain notices of the advantages of applying ashes, charcoal, lime, &c., to fruit trees, to increase their growth; these are often beneficial in moderate quantities, and occasionally eminently so in certain condi-

tions of the tree or soil; but the treatment which is most strikingly beneficial, and in the greatest number of cases, is to make the soil deep and rich, and to keep it clean and mellow, by constant cultivation. Hence the selection of stony ground is bad policy.

THE CLOTH OF GOLD ROSE.

BY THE ASSISTANT BOTANIST TO THE U. S. EXPLORING EXPEDITION, WASHINGTON.

In several numbers of the *Horticulturist*, I have noticed that strictures against, and on the other hand, somewhat favorable remarks, have been made on this Rose, by different individuals; but your intelligent correspondent, Dr. VALK, in the last number, page 574, has endeavored to fix its position or standing among Roses, by defining its character; and I must confess that the greater portion of his observations are at variance with my own, as also that of several Rose-growers in this section of the country.

I would remark, that my observations extend as far back as October, 1845, at which time I came in possession of a small plant of it, about six inches high; this, the following May, was planted in the open ground in an exposed situation, free from any erection, the soil a stiff yellow loam, well incorporated with charcoal dust and wood ashes. By September, many shoots to the height of six feet, had been made; at this time, some of the lateral ones produced from one to two flowers, but not more than eight or ten on the plant altogether. My protection for Roses during the winter, consisting of a light covering of Cedar branches, not intended to resist the cold, but rather to prevent sudden thawings of the shoots taking place. This plant, with two others, budded in the autumn of 1845 on seedling *Noisette* stocks, had last autumn made shoots from eight to ten feet high; many of these half inch in diameter near the base. These plants, in November and October, produced from ten to fifteen flowers each—the color, at this season, nearly equal to *Harrisonii*, or one shade deeper than what they now are.

The points of these long shoots, I tongued and laid down in the usual way, on the 23d of September, in a prepared vegetable compost; and being well rooted by the 15th of November, the layers were potted in eight inch pots, (the plants being now three feet high;) these were placed in a cold pit during the winter, and this spring (in April) they were garlanded with their large yellow flowers, from the top down to the pot, many of them having six to eight of their flowers expanded at one time, and were the admiration of all who beheld them.

The slight cover already noticed, was removed from the three old plants towards the close of March; the tender shoots made late in autumn, were then shortened back a few inches; no other pruning being deemed necessary or proper. The strong shoots were then tied to stakes seven feet high, which the plants now entirely overtop. Like all other Roses here, the first growth made, was injured by frost, but independent of that mishap, these plants have had, since the 25th of last month, a succession of fine flowers, from ten to twelve in number, constantly in bloom, each blossom having a diameter from three to four inches, with from three to five of such flowers in a cluster.

S. D. MORTON, Esq., of Petersburg, Virginia, a few weeks ago, had a plant of the *Cloth of Gold*, with from forty to fifty flowers on it at one time; and Mr. WM. CAMMACK, florist of this city, exposed for sale in market early in March, small plants of it, with from three to five full expanded flowers. A great number of small plants were also brought from Baltimore this spring, and sold at auction here, bringing

very high prices ; in fact, it cannot, as yet, be propagated in sufficient quantities to supply the demand.

Having given my observations, as regards the growth of this Rose here, and its prolific qualities as a bloomer, it may not be out of place to say something definite as to the form and color of its flowers, &c. &c.

CLOTH OF GOLD ROSE, (*Noisette chromata*.) Plant of luxuriant growth, making shoots from six to eight feet the first year, if grown in rich heavy soil ; flowers well in pots, particularly if the plants be layers of the previous autumn, and gently forced towards spring ; foliage large and spreading ; leaflets ovate lanceolate, slightly acuminate, coreaceous, finely serrated, glossy above, glaucous beneath, three and a half inches long, by two broad, of a dark green tint ; costa and petiole beset with strong reflexed spines, as is also the stem ; flowers large, three inches in diameter, (I have often seen them four,) very double, petals firm, particularly the two outer rows, which are of a round form, guarding the interior ones well ; these are smaller, more pointed, a little reflexed at the apex, becoming more irregular in their arrangement towards the centre of the flower, lasting long ; not so fugacious as *Noisette solfaterre* ; color, a fine rich yellow, about one shade lighter than *Harrisonii* ; blooms freely in early summer, and late autumn ; frequently transient flowers between these periods ; equally as hardy as *Noisettes Lamarque* and *Solfaterre* ; bears forcing well, but the color of the flowers, in that case, is not so deep as when grown in the open air. This variety is well

adapted for training against trellis work, or as a standard in the border or lawn.

The *Cloth of Gold*, delights in a rich, loamy soil, and with us, a very slight protection during the winter. The knife should be used sparingly ; I believe, indeed, that this instrument has, in two ways, been the greatest enemy this Rose has had to contend against : first, in the hands of the unskilful pruner, and that of the propagator, cutting it into inches to make plants to supply demands, and turn in the dollar, and then in sharpening the edge of his pen to let the world know how injudicious he had been in the maiming of his favorite. Something farther should be added, respecting a deficiency of that rare virtue—*patience* ; a little of which, moderately exercised, along with good culture, will, I hesitate not to say, place the character of the *Cloth of Gold* Rose in as high a *niche*, if not higher, in the estimation of its most sanguine admirers and disappointed suitors, than it stood when first introduced into this country.

WM. D. BRACKENRIDGE.

[From all parts of the south, where it appears to grow with the greatest luxuriance, we have accounts of the great beauty of this Rose ; and we publish, among our Domestic Notices this month, a very favorable account of it from an intelligent amateur in Virginia, which also corroborates Mr. BRACKENRIDGE's interesting remarks. There is no doubt, therefore, that this variety requires a strong soil to develop its true color, and time and space enough to attain considerable size, in order to exhibit itself in perfection.—ED.]

REVIEWS.

HINTS TO YOUNG ARCHITECTS; *together with a model specification*, etc. By GEORGE WIGHTWICK, *Architect*, London. And HINTS TO PERSONS ABOUT BUILDING IN THE COUNTRY, by A. J. DOWNING. New-York: WILEY & PUTNAM. 1 vol. 8vo. \$1.25.

THIS is a reprint of a valuable recent English work, with very considerable American additions. Of the latter, written by ourselves, we leave the public to form their own opinions, merely premising that they consist mainly of certain practical hints, addressed to persons about building in the country, and comprised under the following heads: WHERE TO BUILD: WHAT TO BUILD: HOW TO BUILD.

Of that portion of the work which is the production of Mr. WIGHTWICK, an English architectural writer of reputation, we may be allowed to speak more fully.

It consists, in the first place, of a section addressed to young architects, and abounding with some of the most valuable suggestions that have yet come under our notice, relating both to the great and little matters of their profession, from the moment when they first take the drawing pencil in hand, to the time when they are supposed to be able to undertake and execute designs in the best style of their art.

These suggestions are by no means written in the cold and formal style of those professional lectures, not unfrequently bestowed on novices in the arts and sciences; but in a familiar and spirited manner, calculated to seize and fix the attention, and to influence directly the practical skill and studies of the pupil. We give, as an illustration, the following paragraph, addressed to the young practitioner:

We would impress upon the young aspirant to architectural honors, our repetition of the RESPON-

SIBILITIES which will attach to him from the first hour of his unaided practice. It may be some time before he will be enabled to purchase assistance; and, during that state of individual probation, he will have—if he have employment—duties relatively more arduous and more harassing, than when commissions shall thereafter pour upon him to the hoped-for advancement of his fame and fortune. He must be for a time “grand master,” assistant surveyor, and druggery clerk, of his own establishment: at once designer artistical, constructor practical, copying draughtsman, measurer, valuer, and more—with which we would not frighten him. He must cultivate resolution on the ground of knowledge, endurance on that of patience, and modesty on the full assurance, that, when he shall have practised to the last day of his occupation, he will have learned the more to know how much he has yet to learn. His profession is a noble one, based on palpable science, and beautified by the poetry of art. It is most gratifying in respect to the society to which it may lead, and the rank it may confer. It is more especially so in regard to the pride which an architect can not but feel in contemplating the material and enduring majesty of the structures he may have to raise. Paintings must be sought in the gallery; statues may indeed preside in the open square; but it is architecture only which towers into the sky—alike commanding, far or near; and combining the graces of form, proportion, and decoration, with picturesque charm and massive grandeur.

That an architect should be a man full of inventive genius, is the first of requisitions; but it is no less imperative that he should combine the utmost practical foresight and sagacity, touching the importance of all the minor details of his art. To enjoy the beautiful to the utmost, human nature should be kept on a platform as elevated as possible above the little miseries of life; and there are few men who would feel compensated, in domestic architecture, for internal discomforts and inconveniences that war with their everyday comfort, by the faultless proportions of a classic colonnade, or the picturesque intricacy of towers and battlements. Our author wisely endeavors, therefore, to impress this point upon the young architect:

Everybody is always in a hurry to have everything done. His patron will take six months to think of what he desires to have accomplished in as

many hours. When the commission arrives, immediate work will be required—not preparatory study: and if there be not a ready foresight to pierce through all contingencies, the progressive and ultimate perplexity will be proportionally bewildering. To anticipate possible objections is greater policy in an architect than to give immediate answer to requirement. Of all professions, his is the one most subjecting its professor to meddling interference, and a thoughtless disregard of trouble taken and obedience unrequired.

“Double, double,
Toil and trouble,”

is indeed the chant of the sister Fates who are hostile to an architect's peace. The graces of the portico, the beauties of decoration and proportion, the triumph over a hundred contending desiderata, shall be all forgotten in my lady's passion for—a housemaid's closet! It availeth not as an excuse that you can put it under the back stairs. “It should have been thought upon before. An architect! and not think of a housemaid's closet! It ought *not* to be an extra.” “Extra!” Fearful word! The builder's aim, and the architect's dread! Let our young friend think of it betimes; and let him bear in mind, that the best guard against the overwhelming censure which follows it, is to habituate the mind to a foresight, which, during a study of the nearest and most important things, should penetrate into the most remote and trifling. All the grand principles of design, convenience, and enduring strength, may have been perfectly answered by the most artistical ability, by ingenious arrangement, and constructive skill; but, if chimneys smoke, gutters leak, or drains choke; if windows prove not in all trials weather-tight; if all the little conveniences of the former house be not added to all the larger ones of the present; if a shelf, a cupboard, or a rail and pins be omitted where custom might expect to find them; if the whims of old servants be not considered, or the carelessness of new ones anticipated; if, in short, the genius of a Michael Angelo be not followed close up with the care of a cabinet-maker, the architect will yet have a toil of vexation to encounter which may make him almost repent the choice of his profession.

We shall begin our practical Hints with some remarks in reference to plans, or internal arrangement, as affecting elevations, roofs, and chimneys.

The young architect too frequently concentrates his attention on those portions of his plan which concern one or more particular façades. Thus, he is careful of his entrance front, and his lawn elevation, as those alone which will be visible to a stranger approaching from the lodge, or walking in front of the sitting-room windows; and no sooner is the building roofed in, than he discovers that the “return fronts” are provokingly more generally visible to the public eye from without the boundary of the premises than the others which have had his too exclusive care. One of his “architectural” elevations is seen in continuous connexion with a surface of unstudied masonry, the respective parts of which neither harmonize in position nor in decoration; or, at the best, he exhibits a display of blank architecture, the falseness of which is proved by certain

prominent necessities which will not be either concealed or modified. The offices and other inferior appendages to the mansion cling to it, and proclaim themselves with all the humiliating impertinence (or rather *pertinence*) of poor relations bent on the declaration of their consanguinity. The idea of “planting them out,” which originally existed in the mind of the designer, still exists in *his* mind only. The trees he requires will take at least fifty years to grow; and, even then, winter will in its turn disrobe them of their foliage to leave displayed an obnoxious range of architectural poverty. Evergreens will *never* grow high enough. The whole thing must remain as it is—a handsome countenance with an ugly profile—a beggar in a velvet waistcoat, and no coat to cover his sides.

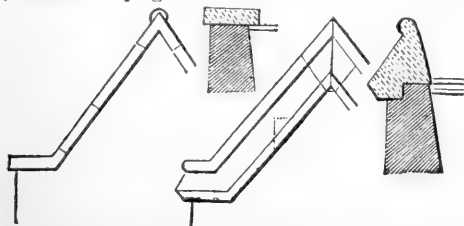
This oversight is still more commonly committed in town houses and street architecture. Nothing is more frequent among builders and young architects than the exhibition of a mere mask, which only deceives while the spectator is directly opposite on the other side of the street, or so far as there may be houses of equal height continuing on either hand. Otherwise, directly the front is passed, the blank masonry or naked gables of the returns show themselves like the mere party-walls in the transverse section of an unfinished range; and these, be it remembered, are often seen for a much greater length of time than is given, in passing, to the main front, since we may have them before us during the whole of our progress along a street of half a mile extent. Perhaps only a portion of the return ends may be seen above the roofs of the lower houses adjoining: but it is not the less necessary to continue along this portion the architectural character of the front. In the many instances which occur of houses rising successively one above the other on the side of an ascending street, too much care can not be taken to give a finished perspective effect. The means will readily suggest themselves to any one who is competent to take professional rank; and to such only do we now address ourselves. Architecture, as we have before said in the first section of our Hints, has a peculiar privilege among the arts in commanding observation from the distance, and no town or range of buildings will ever have an imposing, or even a tidy appearance, while it shows itself to be composed of independent fragments jostling one against another. The beggarly habit of carrying a cornice or parapet, with dressed doors, windows, pilasters, &c., along a twenty feet front, leaving in barn-like nakedness a thirty or forty-foot end, is an abomination which even the most vulgar country builder should eschew. Infinitely better that the whole should be consistent in the absolute perfection of nudity.

In the second place, a considerable portion of the work is occupied with a *model specification*. Every one who has indulged in “the cares of building,” well knows the importance of “specifications.” They are at once the *Dictionary* and the *Revised*

Statutes of the architect, builder, and owner. Upon their completeness, in the hands of faithful artisans, depends in a great degree, the whole good understanding and perfection of the edifice. When we mention first, that scarcely in any two buildings are the specifications precisely the same; and second, that nine out of ten of our professional architects are destitute of any regular formulas by which their specifications can be brought with certainty to a state of the greatest possible completeness, the practical value of this portion of the work before us, must be evident at once.

These specifications are given much in detail, and are pretty thoroughly illustrated by cuts, conveying a definite idea of the parts themselves. We extract a couple of pages relating to carpentry and mason work, to show the value of the work:

The gables of to be capped with a (plain) (moulded) coping of stone of the sectional

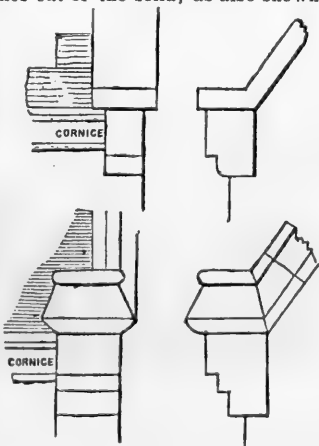


form and scantling shown by detailed drawings, in lengths of not less than " ", (back-notched for horizontal beddings,) and with springing stones and apex-saddle stones cut of the solid, as also shown.

(The springing stones to be supported by cut flush corbels, of the face and profile shown by drawings;)

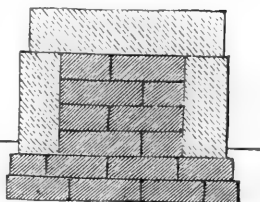
or

(The springing stones to have a return face, supported by corbels of the face & profile shown by drawings) (the said corbels to be of stone, serving to stop the eaves cornice or gutter.)



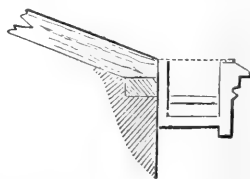
Portico. See Note p. 96.

The plinth under the columns of the portico to be formed of top and side casing of stone, of the sectional form and scantling, and vertical jointings, shown in drawings, properly bedded on the (brick, or rubble) basement and core. The sub-plinth bonded into the said core, having its bonding stones under the axes of columns. (Page 95.)



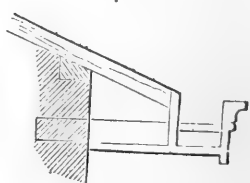
Frame and fix an 1½ inch bead flush and square trap door, in proper rebated frame, for ascent into the roof where shown on plans, with hinges and fastenings.

Inch { white pine }
 { Memel deal }
gutter cornice to be fixed to the eaves of the roof, having both a fixed and a falling bottom, with moulding on the front, as drawing, and of the dimensions there figured.



Or,

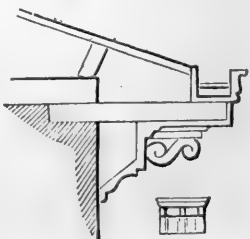
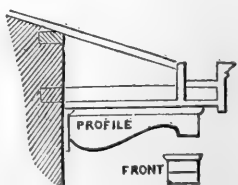
..... (same as before; adding) the same to project from the face of wall as shown, and to have a boarded soffit of inch deal, ploughed and tongued joints.



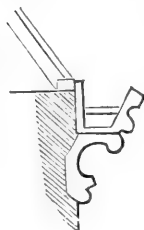
Or,

..... (same as Nos. 247 and 248; adding) also deal cantilevers, cut, moulded, and framed at intervals of " " apart, into an inch Memel deal fascia board, having moulding to correspond.

Cornice to eaves to be formed of Memel deal, framed, glued, blocked, and moulded as drawing, with cut modillions at intervals of inches apart; and a gutter of the clear dimensions shown in section, and having a falling bottom to be formed behind the upper mouldings of the cornice.



Cornice to eaves to be formed of Menel deal, framed, glued, blocked, and moulded as drawing, with rain-water gutter, of the clear dimensions figured, and having a falling bottom formed in the upper part. (Page 122.)



Every observer who is conversant with the state of architecture in the United States, at the present moment, must be profoundly sensible that we are in the midst of a new era in the art. Cities, towns, and villages are not only being built as rapidly, or more rapidly, than they have been at any previous periods of our history, but there is a large class of professional architects springing up in various parts of the country, and there is, at the same time, a growing attention and interest felt in the subject, by our whole intelligent population. Hundreds of persons, in various parts of the country, who, ten years ago, were ignorant that domestic architecture could assume any other variety than the two opposite extremes of a Dutch barn and a Greek temple, are now alive to all the beauties of the various classical and picturesque styles.

It is in the artistical cultivation of the more intelligent class of our landed proprietors, that we place our hopes of the final prevalence of sound principles of taste in architecture and other fine arts in America. While we rate, as highly as any other individual, the great value of the highest professional talent, we also attach the greatest importance to a general cultivation of the mind of the country at large, in the principles of beauty and utility in these arts. This will at once raise the *standard* of the works demanded—whether it be houses, books, pictures, etc.; and it will prevent the public from being imposed upon by the many pretenders, and quack-architects, that will

always be more or less common in a country like ours, where the demand for labor and talent is always greater than the supply.

We offer this work, then, to the public generally, or at least all that part of it who build houses—as one which will greatly assist them, in no inconsiderable degree, in attaining that kind of knowledge which must be of eminent practical value to them in all operations that demand the skill and labor of the architect, builder, or mechanic. It will enable them to build more correctly, more cheaply, more satisfactorily, and more agreeably, than any person, deficient in this kind of information, possibly could do; *since half the difficulty of doing anything will vanish, when we know how it should be done.*

To young architects, and indeed to most of those already well versed in their professions, we need scarcely commend this work as an invaluable assistant to their daily labors. A single glance at its pages will show them that we have not over-rated its merits in this respect.

.....

A **DICTIONARY OF MODERN GARDENING**; by GEO. W. JOHNSON. Edited, with numerous additions, by DAVID LANDRETH. Philadelphia: LEA & BLANCHARD. 1847. 12mo. pp. 635.

A **VERY** useful compendium of all the chief points of interest in horticulture, arranged in that old and most accessible of forms—an alphabetical one.

MR. JOHNSON has not attempted, in this volume, so far as we have examined it, to add much to the already existing stock of ideas before the public, but to array them in a concise and simple manner, so as to afford the requisite information on a given topic in a small space. Nearly all the leading authors of the day have been laid under contribution, to make up the different paragraphs; and the result is a very good

digest of the theory and practice of the day in England.

The present American edition has been brought out under the editorial care of that most respectable and excellent cultivator, DAVID LANDRETH, of Philadelphia. We extract the following paragraph, explaining the character of the reprint, from the publisher's preface :

"The ordinary form in cases of reprint, with additions and explanatory notes, has been departed from in this instance, with a desire to preserve the book from the awkward aspect which it would necessarily present, if every addition by the American Editor had been included within brackets, or printed in varied type.

"This edition has been greatly altered from the original. Many articles, of little interest to Americans, have been curtailed, or wholly omitted, and much new matter, with numerous illustrations, added; yet the present Editor freely admits, and has desired the publishers to state, that he has only followed in the path so admirably marked out by Mr. JOHNSON, to whom the chief merit of the work belongs."

Our own judgment differs from that of the publishers, in this respect. By following the usual mode of designating the additions of the American editor by *brackets*, one is at no loss to know on whose authority—whether, for example, that of Mr. JOHNSON or Mr. LANDRETH—any given statement is made. We cannot but think this an important matter, since, even in this expurgated edition, we find many directions for culture given, which do not properly apply to our climate, yet regarding which, as the matter stands, one is left to conjecture whether they are from the pen of the English or American editor.

Mr. LANDRETH's additions, (as we suppose them to be,) are most conspicuous in the articles on the different fruit trees. The selections, though small, are generally good, and the descriptions of some of the varieties are accompanied by outlines, part of which, we observe, are taken from our work on Fruits. We notice the following

error, (perhaps some accidental transposition of the printers,) in the account of the *Gloria Mundi* apple :

"GLORIA MUNDI: synonyms *Monstrous Pippin*, COXE; *Golden Ball*, Kenrick. COXE says this imposing apple originated on Long Island. Downing supposes it came originally from Maine," etc. p. 49.

By turning to our *Fruits and Fruit Trees*, the reader will see that we by no means consider the *Golden Ball* synonymous with the *Gloria Mundi*. The fruits are widely different. The latter ripens from October to January, and the former from December to March. In our description of the *Golden Ball*, we state: "This is a favorite apple in the State of Maine, where it is probably a native." In the account of the *Gloria Mundi*, we state: "It is not a little curious that the origin of this apple is claimed for Red Hook, (on the Hudson,) for Long Island, and Baltimore."

We find that Mr. JOHNSON has as great faith in the virtues of *common salt*, upon vegetable growth and health, as ourselves. The following paragraph, relating to its effects upon plants suffering from the disease known as the *honey dew*, (and which first appeared in his *Principles of Gardening*.) will interest our readers :

"The various successful applications of liquids to plants, in order to prevent the occurrence of the honey-dew and similar diseases, would seem to indicate that a morbid state of the sap is the chief cause of the honey-dew, for otherwise it would be difficult to explain the reason why the use of a solution of common salt in water applied to the soil in which a plant is growing, can prevent a disease caused by insects. But if we admit that the irregular action of the sap is the cause of the disorder, then we can understand that a portion of salt introduced into the juices of the plant would naturally have a tendency to correct or vary any morbid tendency, either correcting the too rapid secretion of sap, stimulating it in promoting its regular formation, or preserving its fluidity. And that by such a treatment the honey-dew may be entirely prevented, I have myself often witnessed in my own garden, when experimentalizing with totally different objects. Thus I have seen plants of various kinds,

which have been treated with a weak solution of common salt and water, totally escape the honey-dew, where trees of the same kind growing in the same plot of ground not so treated, have been materially injured by its ravages. I think, however, that the solution which has been sometimes employed for this purpose is much too strong for watering plants. I have always preferred a weak liquid, and I am of opinion, that one ounce of salt (chloride of sodium) to a gallon of water, is quite powerful enough for the intended purpose. I am in doubt as to the correctness of Knight's opinion, as to the mere water having any material influence in the composition of such a remedy, since I have noticed that standard fruit trees, around which, at a distance of six or eight feet from the stem, I had deposited at a depth of twelve inches a quantity of salt to promote the general health and fruitfulness of the tree, according to the manner formerly adopted to some extent in the cider countries for the apple orchards, that these escaped the honey-dew which infected adjacent trees, just as well as those which had been watered with salt and water."

Both the theoretical and practical horticulturist will find this *Dictionary* an interesting book, and worthy of a place among those for daily reference.

.....

ILLUSTRATIONS OF MEDICAL BOTANY: *consisting of colored figures of the plants, affording the most important articles of the Materia Medica, and descriptive letter press.* By JOSEPH CARSON, M. D. Philadelphia: ROBERT P. SMITH, 144 Chestnut-street. No. 1. 4to. p. 28.

WE announced this work as in preparation

some months ago, and we have now the first part lying before us. Its chief design is to furnish faithful portraits, of the size and color of nature, of all the most important plants of the *Materia Medica*. The plates are characteristically drawn on stone, and neatly and faithfully colored. They are accompanied by concise botanical descriptions, and a brief statement of the peculiar medical qualities of each species. The author observes: "As the design of the work is simply to present the botanical history of the *Materia Medica*, and not a complete account of it, with the exception of indicating the modes of operation peculiar to each substance, all therapeutical and pharmaceutical details appertaining to it, have been omitted. The works especially written with the view of unfolding them are full, and easy of access."

When we reflect how many students, physicians, and dealers in medicine in this country, are ignorant of the living appearance of the vegetable remedies which they employ, we cannot but believe that a work of this kind is well timed, and will be found exceedingly useful.

FOREIGN NOTICES.

RHUBARB TARTINE.—The enclosed recipe for making what I call, for want of a better name, "Rhubarb Tartine," will, I think, be of some use to cottagers and others, as a cheap mode of using Rhubarb, and especially to those who find pastry unwholesome. Take as many Rhubarb stalks as will fill a baking dish, and lay them in water for ten minutes; then grease a dish for baking, and put in the bottom of it some bread cut in slices about a quarter of an inch thick, toasted and soaked a few minutes in some boiling water poured into a plate, with two table spoonfuls of moist sugar in it. Cut the Rhubarb into pieces an inch long, and fill the dish; then put some slices of toasted bread, soaked as before, to cover the top, and bake it about an hour and a half, or till well done. If the toast be cut from the bread after being toasted it will be the nicer.—G. Cooper. *Gard. Chron.*

ASPARAGUS.—I venture to call attention to a practice which prevails so almost universally as to fill me with astonishment, and at the same time make me feel some hesitation in applying to it the terms ridiculous and absurd. The practice to which I allude was forced particularly on my attention in passing through Covent Garden market, on Saturday last, when of all the beautiful Asparagus exposed for sale, every bundle that I saw was white to within an inch of the top; whereas had it been allowed to grow higher above the ground, it might have been not only edible but delicious.

I am quite at a loss to account for the prevalence of the custom of earthing up the plants so high for the mere purpose of blanching the stem. I have, for several years, been in the habit of cutting a large quantity of Asparagus, and my practice has been this: Some time between the second week in

April and the 1st of May, (I speak of the south-western counties,) the beds are raked off so as to leave not more than two inches of light mould above the crowns of the roots, and none is cut until five or six inches above the ground, and I never remember a person to whom this practice was new, partaking of the produce, who did not remark on its exceedingly fine flavor and delicious quality. By this means a great quantity of edible matter is gained, and that certainly without the sacrifice of any delicacy or fineness of flavor. Moreover, to an unprejudiced eye, a dish of green Asparagus is at least equal in appearance to one of white. I make no doubt that if one of the Covent Garden dealers was to start with a lot of green "Grass," all who ventured to taste it would continue to frequent his stall in preference to any other. In conclusion let me ask, whether any real advantage accrues from the use of the saw called an Asparagus-knife, over one of ordinary make, with a blade of sufficient length?—O. *Gard. Chron.*

.....
ROOT-PRUNED PEAR TREES.—As I was one of the first who called your attention to the root pruning of Pear trees, for the purpose of making them bear early, I was glad to find, on a visit to Sawbridgeworth nursery the other day, that Mr. Rivers has carried out, with the most complete success, his management of the Pear, so as to produce early fruitfulness, and yet the most vigorous and healthy growth. I should say that you will scarcely find one tree in a hundred of his vast nursery of Pears (covering, I can not recollect how many acres,) which is not covered with bloom. The trees are 3 to 4 feet high, trained conically, and, with few exceptions, all grafted on Quince stocks. In addition to the dwarfing effect of this stock, he finds many of the best kinds of Pears, which are worthless on Pear stocks, produce excellently flavored fruit on the Quince. There are, however, some kinds which he finds it impossible to cultivate on this stock, and therefore, in order to avail himself of the advantages of the stock, he first grafts on it a common Pear, and then grafts or buds the reluctant or refractory variety on the Pear; and by this mode of double working, he procures a good bearing tree, with all the advantage of the Quince root. Five years ago I had small Pear trees, with bloom buds in November, which bore a good crop in the following year; and any one who had laid in a stock of these little conical trees last autumn, might have this season had an orchard of Pears in full bearing, always presuming that we do not have such a May to destroy our fruit as we had last season. It is astonishing what a collection of these trees may be contained in a small space; from 5 to 6 feet apart, in rows running north and south, is quite space sufficient. I feel satisfied that not half sufficient attention is paid to this fruit for our desserts; a very little care, and a judicious selection of sorts, would ensure them daily from the end of July till May. I found two sorts in Mr. Rivers' fruit-house both in excellent order—the *Fortuné*, an admirable Pear, and the *Ne plus Meuris*, and I dare say these will be equally good a month hence. I think he told me he had nearly 900 kinds, of course very many of which are

worthless, but there are many which he has not yet proved, and again, although his grounds afford a great variety of soil and aspect, yet as it is known that climate, aspect, and soil, have a strong influence on the excellence of the fruit, we are still in want of information from your various correspondents on this subject. There are many kinds which produce finer looking fruit on walls, which, however, are much surpassed in flavor by the smaller fruits, as on espaliers or on conical-shaped standards. I have adopted a suggestion of Mr. Rivers' in planting a conical trained standard near the wall between my Peach trees, and find the fruit of the tender varieties better flavored than what is grown against the wall; and these trees take up little or no wall. Mr. Rivers finds the trees grafted on Quince stocks flourish better when the whole of the stock is covered with earth (he grafting at about 6 inches from the ground) as the stock is apt to get hard and hide-bound, especially when the graft is of a kind of vigorous growth. He has planted several on mounds of earth, tonguing the stock to encourage the throwing out of small roots, and he proposes in the autumn to replant them, cutting away the bottom strong roots, and then obtaining little else than a mass of fine fibrous roots for the support of his tree, which will make fruitfulness certain. When this matter was first discussed, that is, a systematic course of root-pruning, for we all admitted that it was occasionally done before, the objectors cried out that no good fruit would be produced, that the fruit like the trees would be stunted and without flavor and gritty. I can report that the fruit on my root-pruned trees has been finer than that produced on old trees which were left in their natural state; but these pruned trees must be duly attended to, manured, and must be mulched in a dry summer.—*Dodman*. P. S. I forgot to mention that at Sawbridgeworth, Mr. Rivers is making a large collection of Plums, having nearly 150 kinds, many obtained from Germany as well as America. I think it important to obtain some of the hardy German kinds, which are so much used in cooking, both of the earliest and the latest sorts. *Gard. Chron.*

.....
KILLING INSECTS ON THE VINE.—In a review of a new *Traité sur les Vins de la France*, by BATHILIAZ, in the *Gardener's Chronicle*, we find the following highly interesting account of a successful mode of destroying insects, infesting the Grape Vine:

In the first part of his treatise, the author has given some account of the insects which are most injurious to the Vine in France, viz., *Pyrallis*, or *Ver de la Vigne*; a species of *Tinea*, or *teigne de la Vigne*; and the alate or pucevette, a coleopterous insect of the genus *Chrysomela*. Of these, the first mentioned is the most formidable, extending its ravages over great tracts of country, and occasioning enormous losses in the vineyards, especially in the southern provinces. In the departments of the Saône and Loire, and of the Rhine, for example, the loss occasioned by it in 10 years has been computed at 34,080,000 francs, and this, says Mr. B., is by no means an exaggerated estimate. In the department of the Lower Charente, between

the years 1815 and 1838, it was found to destroy to the value of 922,000 francs, and in the Eastern Pyrenees the average annual waste which it occasions is reckoned to be not less than 14,000 hectolitres. Such being the case, it became an object of importance to discover the means of protecting the Vines from these destructive attacks; and in the year 1837, a distinguished entomologist (M. Audouin) was commissioned by the government to investigate the subject. He examined the insect in all its phases and transformations, and, after trying without success to extirpate it by caustic and poisonous applications, recommended collecting and destroying the eggs before the development of the caterpillars, which takes place in the beginning of August. This method, however, is too troublesome to be generally employed; and the same may be said of the plan of covering each stock with an empty cask, and fumigating with sulphur. Corrosive washes, and the application of glutinous substances to the bark, proved of little avail, as the insect commences its devastations in the form of a minute caterpillar, which has the power of suspending itself by a slender thread from the edges of the leaves, and of thus transporting itself from one leaf to another; and the dusting of the buds with quick-lime and arsenic, which was recommended by some, only killed the leaves, and therefore did more harm than good. None of these measures being found efficacious, a wine-grower of Romanèche, M. Raclet, bethought himself of the expedient of assailing the insect in the form of chrysalid in the fissures of the bark where it lodges, during the winter months, by pouring boiling water over the stocks, and the experiment was attended with perfect success. For this purpose, Mr. R. employed a vessel of tinned iron, with a small spout, holding a litre, or full quart, and covered with list or cloth; and, having filled it with boiling-water, he emptied the contents over the stocks, beginning at the top, and avoiding the young shoots and buds. By this process the vitality of the chrysalid is destroyed, and that without injury to the plant. A deputation from the Agricultural Society of Macon, to whom M. Raclet had communicated his invention, was sent to verify the results, and certified, that by the above described operation the insects were killed; and that the Vines which had been so treated were more vigorous, and yielded a larger produce than those in the neighborhood, where the insects had been allowed to remain undisturbed. Twelve hundred stocks, covering eight ares, or a fifth of an English acre, gave three hectolitres of wine, while the produce of six hectares, or nearly fifteen English acres of contiguous vineyard, was only twelve hectolitres. M. Raclet calculates that three persons may go over with the hot water, sixteen ares, or about 2,400 stocks in the course of a day.

.....
FRENCH WINE MAKING.—The gentleman to whom I brought the letter was not himself a proprietor of vineyards at Hermitage, but was requested to introduce me to some person having a vineyard there. On waiting upon him this morning, I found a letter prepared for me, addressed to Messrs. Richard and Sons, who are eminent wine merchants

and bankers in Tournon, a town on the opposite side of the Rhone to Tain, and joined to it by a suspension bridge. On receiving this letter, I hired a vehicle to carry myself and my baggage to Tain, which is a small town, situated on the left bank of the Rhone, on the plain which lies immediately between the hill called *Hermitage* and the river. On presenting my letter, and explaining in general terms the object of my visit, I entered into conversation with Mr. Richard, senior, relative to the wines of Hermitage. The greatest part of the finest growth is sent to Bourdeaux to mix with the first growths of claret. Messrs. Richard are themselves proprietors of part of the hill of Hermitage, but not of that part which yields the finest wines. They are also wine merchants; but like the Messrs. Durand, of Perpignan, they sell it only on the grand scale. One of the sons, who manages this department, conducted me over the cellars. The press is more complete than any I have ever seen; the screw is of iron, and from the closeness of the worm, must be of immense power. It is raised in the centre of a square trough, about seven feet in diameter. The female screw is covered by a horizontal wooden wheel, the spokes of which project over the sides of the trough, and are finished off so as to afford a convenient handle for the workmen. At the height of a foot from the bottom of the trough, on the outside, there is a circular stage projecting from its sides for the workmen when filling the press, and turning the wheel. The sides of the trough only rise to the height of this stage. The grapes, without any previous treading, are built up in the trough to the height of the screw, and when the latter is turned, the *must** flows from spouts which issue from the bottom of the trough at each side. When the sides of the mass which may have been pressed out so far as to escape from the action of the press, have been cut off with an instrument resembling a hay-knife, and the press has been raised so as to receive this additional quantity, and again put in operation, the process is complete; not a drop of *must* remains in the *marc*, as the mass of skins and stalks is called. The *marc* is disposed of, and employed to produce a bad brandy; for this purpose it is soaked in water to extract any saccharine matter which may remain, and the fluid which it yields, when again pressed, is fermented and distilled. To my astonishment, Mr. Richard informed me, that by one charge of this press they could obtain 40 casks of wine of about 50 gallons each. As the *must* flows from the press, it is conveyed to the casks, where it is suffered to ferment from five days to a month, according to the strength of fermentation, the casks being always kept full to permit the scum to escape. When the first fermentation is decidedly finished, the wine is drawn off into a clean cask, which has been previously sulphured. This is the whole process of making the white wines of Hermitage. They are more or less sweet according to the proportions of sweet and dry grapes which have been united in producing them, for they are all made from two varieties, the *Marsan*, yielding a *must* which by itself, would give

* Fresh unfermented grape juice.

a sweet wine, and the *Rousette*, a *must*, which by itself would yield a dry wine.

The white wine of *Hermitage*, even after having undergone the complete fermentation above described, still retains a disposition to effervesce when put into bottle. It is said to be, without question, the finest white wine of France, and will keep 100 years, improving as it gets older; and when very old, acquiring a similarity to the white wines of Spain.

For fermenting the red wines, Messrs. Richard have two vats, each capable of containing 16,000 gallons. Every day as the grapes are brought from the vineyard, they are trodden in troughs, and then emptied into the vats; and while the vats are filling, a man gets into them once a day to tread down the surface. The object of this is to prevent the surface from becoming sour by exposure to the air, and to render the fermentation as equal as possible through the whole mass. When it becomes too deep for a man to tread it to the bottom, he suspends himself by the middle from a plank across the vat. The duration of the fermentation is very uncertain, depending upon the state of the weather, and the ripeness of the grapes. Messrs. Richard ferment the finest grapes in one vat, and those of an inferior quality in the other. I tasted the wine of both vats of the large vintage; the first was made of the best grapes, which were also gathered in dry and warm weather; the second quality was made from the inferior grapes, and from others which had been gathered during rain and cold weather. The fermentation of the first was over in five days, and its present value is 300 francs the cask of 210 litres, (that is, about as many bottles;) the other continued fermenting in the vat for twenty days, and its present value is only 80 francs for the same quantity.

The finest clarets of *Bordeaux* are mixed with a portion of the finest red wine of *Hermitage*, and four-fifths of the quantity of the latter which is produced are thus employed. The wines are racked off the lees in spring and sulphured. A very small piece of sulphured match is burnt in the casks intended for the white wine; the red wine requires a greater portion. These matches are purchased from persons who make a business in preparing them. They are slips of paper, about one inch and a half broad, and when coated on both sides with sulphur, are about the thickness of a sixpence. A piece of one inch and a half square, is sufficient for a cask of white wine containing 50 gallons. *Busby's Visit to the Vineyards of France and Spain.*

.....

FA-TEE GARDENS NEAR CANTON.—Here then I beheld a specimen of the far-famed system of Chinese gardening, about which we have read so much in European authors: I will, therefore, describe them somewhat fully. The plants are principally kept in large pots arranged in rows along the sides of narrow paved walks, with the houses of the gardeners at the entrance through which the visitors pass to the gardens. There are about a dozen of these gardens, more or less extensive, according to the business or wealth of the proprietor; but they are generally smaller than the smallest of our Lon-

don nurseries. They have also stock grounds, where the different plants are planted out in the ground, and were the first process of dwarfing their celebrated trees is put in operation. These contain large collections of *Camellias*, *Azaleas*, *Oranges*, *Roses*, and various other well known plants, which are purchased by the Chinese when in flower. The most striking plant in autumn or winter, is the curious fingered *Citron*, which the Chinese gather and place in their dwellings or on their altars. It is much admired both for its strange form and also for its perfume. The *Mandarin Orange* is also much grown at *Fa-tee*, where the plants are kept in a dwarf state, and flower and fruit most profusely, producing large flat, dark, red-skinned fruit. The Chinese have a great variety of plants belonging to the *Orange* tribe; and of one, which they call the *Cumquat*, a small oval-fruited variety, they make a most excellent preserve. The *Murraya exotica*, *Aglæa odorata*, *Ixoras*, and *Lagerstræmias*, are very ornamental here in autumn.

But it is of course in spring that the *Fa-tee* gardens possess the greatest attractions. They are then gay with the *Tree Pæony*, *Azaleas*, *Camellias*, *Roses* and various other plants. The *Azaleas* are splendid, and reminded me of the exhibitions of the garden of the Horticultural Society at *Chiswick*, but the *Fa-tee* exhibitions were on a much larger scale. Every garden was one mass of bloom, and the different colours of red, white, and purple blended together, had a most beautiful and imposing effect. The principal kinds grown were *Azalea indica*, *indica alba*, *phœnicia*, *lateritia*, *variegata*, and the yellow *Azalea sinensis*. I may mention, in passing, that I found the latter plant wild on the *Ning-po* hills, so that there is no doubt of its being a genuine Chinese species. The air at this season, around *Fa-tee*, is perfumed with the sweet flowers of *Olea fragrans* and the *Magnolia fuscata*, both of which are grown extensively in these gardens. Dwarf trees, as may be supposed, occupy a principal station; they are trained into the most grotesque and curious forms. The plants which stand next to dwarf trees in importance with the Chinese are certainly *Chrysanthemums*, which they manage extremely well, perhaps better than they do any other plant. So high do these plants stand in the favor of the Chinese gardener, that he will cultivate them extensively even against the wishes of his employer; and, in many instances, rather leave his situation than give up the growth of his favorite flower. I was told, that the late Mr. Beale used to say, that he grew *Chrysanthemums* in his garden for no other purpose than to please his gardener, not having any taste for this particular flower himself.

Tree Pæonies are not natives of the south of China, but are brought down in large quantities every year, about the month of January, from the northern provinces. They flower soon after they arrive, and are rapidly bought up by the Chinese to ornament their houses, after which they are thrown away, as they do not thrive well so far south as *Canton* or *Macao*, and will not flower a second season. They are sold according to the number of flower buds they may have upon them,

many of them fetching rather high prices. *Fortune's Three Years in China.*

BEGONIA FUCHSIODES. Fuchsia-like Begonia, or Elephant's Ear. *Stove Perennial.* (Begoniads.) Ocaña Mountains of New Grenada.—A most lovely new Begonia, detected by Mr. Purdie, during his mission for the Royal Gardens at Kew. It is easily propagated by cuttings, grows rapidly, bears small but copious foliage, and is a plant to which he particularly requested our attention, on account of the copious, elegant, drooping red flowers, at first sight resembling those of a Fuchsia; and because it is much eaten to allay thirst by the Arrieros (mule drivers) of the country. He also observes that the globular buds, (meaning, probably, the buds of the fertile blossoms, which are globular) contain a fluid, which, together with the acid of the flowers, proves highly grateful in the dry season and where there are no rivers. It has bloomed during the autumn months with Mr. Veitch of Exeter, who has one plant three feet high, loaded with flowers. Our plants are now beginning to flower. It is singular that, as far as they have yet blossomed, the plants have proved only male-flowered, except the tall one of Mr. Veitch, which has one cluster of female flowers at the top. *Botanical Magazine.*

FUEL IN PARIS.—It is quite cold to-day, and I have been obliged to have a fire; I therefore purchased two francs' worth of wood. There is a *marchand de bois* across the street, who occupies not a spacious wood-yard, as you would probably imagine, but a small shop, and that shop, small as it is, is large enough to stow many thousand francs'

worth of this precious article. They would no more think of exposing it to the depredations of the needy and unprincipled, in the open air, than a silversmith with us, would pile up his wares in a yard; why, while the *marchand de bois* was looking away, some scoundrel might fill his pockets and be off. For two francs I got twenty-three sticks, short sticks, rather small; and for two sous each I purchased two bundles of kindlings in fagots. It is, I believe, about a franc and a half for fifty pounds. When a fellow was going to buy a foot, they hardly thought him sane, and inquired if he would pay on the spot. The shop of the *marchand de bois* is decorated outside with paintings of piles of wood in perspective, presenting a perfect El Dorado, like the piles of gold in the broker's windows, only less real; they sell also *charbon de terre* and *charbon de bois*. They also sell (it will make you laugh to hear) small pine cones, four for a sous, for fuel. In the winter they burn English coal, which is dear too, mixed with wood. The forests in France are mostly consumed, and great complaints are made of the high duty on English coal. — astonished his barber by telling him he had burnt up while camping out many thousand francs' worth of wood in one night! Their manner of sawing wood expresses the value they put upon it; instead of subjecting it to the rude contact of a saw-horse, they hold it carefully in their hands, and rub it up and down the saw; The sawdust is of course carefully preserved; they would as soon waste gold dust. A good deal might be said on the influence which the scarcity of fuel has had on the French character, driving them to the café and the spectacle, from the fireside.—*Paris Correspondent, Salem Gazette.*

DOMESTIC NOTICES.

PAULOWNIA IMPERIALIS.—There are few things in the vegetable world that more effectually illustrates the skill of the hand which formed them, than the flower buds of this tree. Growing through the summer with a rapidity and luxuriance unsurpassed by any hardy tree known in this climate, it begins to consolidate its juices as the winter approaches, and to form of its own resources, a beautiful little dwelling for its infant flower, and the germ destined to perpetuate its existence. The seeds being fairly established, each in its little cell, and surmounted by the steeple-like style, the four stamens are delicately folded about them, and covered with a texture like fretted mother of pearl. The whole is then surrounded by a delicate moss covered tissue, resembling very much the beautiful frost work that covers the leaves of the ice plant, and the interior surface of which is like finely polished silver. This is then covered by a thick cellular tissue, lined with this same delicate frost work, and protected on the outside by a tough rind, resembling through a powerful microscope, the external cover-

ing of the cocoanut, and admirably adapted to protect the bud from cold and from every external injury. The bud is rather oval, about three-eighths of an inch in diameter one way and five-eighths the other. When the spring opens, the bud begins to swell, the outer covering bursts at the apex; the mossy lining of the outside, and the mossy covering of the inside, separate and present at this stage a beautiful frost-like appearance. The delicate covering of the inside now begins to slide apart the four layers which crown its apex, and the flower opens its blue point to the light of day. The warm spring sun now soon expands the entire flower and exhibits the colour of a light purple, slightly shaded with blue. In form it is somewhat like a Foxglove, between the Gloxinia and the Bignonia radicans, and the specimen before me measures two and five-eighths inches from the base of the calyx to the top of the petals. This calyx is as thick as heavy buckskin, and, as before remarked, is most admirably adapted to protect the flower-bud from intense cold. The flowers are produced in racemes at the extre-

mities of the branches, and will probably continue in bloom a long time, as some buds have scarcely swelled while others are fully expanded. The fragrance is very slight and not unpleasant.

I have watched with no little interest the formation of the bud and the expansion of the flower on the tree in our grounds, and am quite of the opinion that the Paulownia, with its very rapid growth, its perfect symmetry, its entire hardness and its racemes of beautiful flowers, is a very valuable and highly ornamental acquisition to the list of hardy deciduous trees. *S. B. Parsons. Flushing, 5 mo. 20, 1847.*

[This is the first specimen of the Paulownia, so far as we have heard, to flower in the United States.—ED.]

AZALEA SINENSIS, HARDY.—You are acquainted with that downy plant the *Azalea sinensis*; its habits you are aware, are not dissimilar to the American *Pontic*—the hardy and shrubby variety so ornamental in pleasure grounds; the flowers of the *sinensis*, however, are of a much more intense or brilliant orange than any of ours, and are really splendid, on which account and being an exotic, it has been, so far as I have observed, treated as an indoor shrub. From some remarks I heard a friend make last autumn on Azalea culture, I was determined to try it out; and although my specimen plant was transplanted into one of the flower beds, out of a pot, in November, and, to make the experiment thorough, left totally unprotected, it is now, May 20, fast breaking into leaf, even at the extreme tip of the longest branch, and showing some half dozen flowering heads, with a strong shoot coming up from the roots. The circumstance of this fine shrub being hardy, greatly enhances its value as an outdoor shrub. Too little attention is paid to the culture of hardy Azaleas; many of them have been hybridized by Mr. LANDRETH, of Philadelphia, with complete success. I have one called *radi-cans*, sent me by G. WINTER, Esq. of Flushing, whose flowers almost vie with the beautiful *sinensis*, and add greatly to the gaiety of the garden in this, the "rosy time o' the year." I am yours very truly. *G. C. Thorburn. Astoria, Long-Island.*

CLOTH OF GOLD ROSE.—Though this rose, when first introduced into the country, bore a high reputation, and was sought after with avidity, yet it appears to have been received with faint praise by those who have succeeded in flowering it. No encomium however, that has ever been passed upon it, could have been exaggerated. It is indeed the queen of roses. In the bud, and until it is half expanded, it is impossible to conceive of an object more exquisite. It is the appropriate type of girlhood, in all its loveliness and purity. Nor indeed is it less perfect when fully blown. Not only in form, but in size, is it entitled to pre-eminence over the most admired of the tribe. S. D. Morton of this place has succeeded in developing its beauties in a manner to make it the admiration of all beholders. Twelve months ago he turned out a small plant in his grape-house, the soil of which had been trenched and enriched to the depth of two feet. During the summer it made a luxuriant growth, extending itself fully eight feet; and at this time it has about forty

buds and roses upon it. In colour, it is a light sulphur—lighter probably, by several shades, than if it had been grown in the open air. *P. Petersburg, Va., May 1, 1847.*

LARGE NATIVE PEAR TREE.—We learn from Mr. JNO. OWEN, Cambridge, Mass., that the original *Harvard* pear tree is yet standing in Cambridge. The trunk at 4 feet above the ground measures 4 feet 2 inches in circumference. It is growing in a clay soil.

PROTECTION AGAINST LATE FROSTS.—One of the most vexatious impediments to the successful cultivation of fruit that the cultivator has to contend against in many districts of our country, is the liability to partial or complete ruin to the blossoms or young fruit by late spring frosts. This disaster may be prevented by smoke, as is known to many; but the ease and safety of the application is not appreciated as it should be; and to call attention to it is the object of this communication. In the winter or spring previous to the season of fruit blossoms, I procure a wagon load of sawdust or refuse tan bark from the tannery, a part of which I place under cover that it may become dry, and the rest I leave exposed to the weather. At the season of exposure, if the weather gives indications of danger, and the temperature is nearly or quite down to the freezing point, at one or two o'clock in the morning, I take two or three shovelful of the dry bark or sawdust, and lay it on the ground; into this I put a coal of fire; then, on this place half a bushel or more of the wet bark or sawdust, and a smoke will quickly rise that will prevent the accumulation of frost for some distance around. Two men will make twenty or thirty of these fires in nearly as many minutes, which will be sufficient to protect a fruit garden of an acre in extent. If there is a slight current of air, I place the fires on the windward side of the garden, if not, they are so arranged as to give security to those trees which have blossomed most fully. At the season when fruit trees are in flower, frost rarely condenses on vegetation until late in the night, and if the fires are going by two o'clock in the morning, it will be soon enough, and more fuel will not be needed, as it would be, should they be set at an earlier part of the night.

Smoke, however annoying and vexatious under certain circumstances, may be turned to good account in the matter referred to. Artificial means are often resorted to, to retard the blossoming of fruit trees until a late period in the season, in order that the danger from frost may be lessened. The latter method affords but partial safety at certain and considerable expense, which is worse than lost should no frost occur; because as much time as the flowers are kept back, the fruit will be delayed in ripening, and many of the best varieties cannot, in northern latitudes, mature, unless they have every day of the short summer. Smoke, of course, would be much more available in the fruit garden than in the orchard. But even in the latter, one hundredth part of the loss occasioned by a severe late frost would be more than sufficient to defray all the expense of protection by warm vapor or smoke in the way I have pointed out, and which I have thorough-

ly tested here. Yours. *C. S. Newport, N. Y., June 11, 1847.*

[We should think the foregoing an admirable suggestion, and worthy of extensive trial in interior districts.—ED.]

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FRESH PEACHES IN WINTER.—Early in April we had the pleasure of receiving from SAMUEL WYMAN, Esq. of Baltimore, two tin cans, hermetically sealed, holding about two quarts each, bearing the following printed label :

"FRESH PEACHES, put up in the natural state, without sugar, and suitable for a dessert, to be eaten with sugar and cream, etc. *Warranted to keep 12 months in any climate.* Put up by Edward Wright, 16 Hill street, Baltimore."

Mr. WYMAN informs us that these peaches, which were of large size, were grown by himself; that he has made repeated trials of this, Mr. WRIGHT's mode of preserving, with the details of which he is unacquainted; and adds, "I feel constrained to say that this process of preserving, whatever it may be, maintains the natural taste and flavor of the fresh fruit, in a degree far superior to any other with which I am acquainted."

On opening the cans, we found the peaches *halved*, and apparently lying in their own juice. When cut up with sugar, they are as nearly as possible like the fresh fruit in appearance and flavor, and to our own palate infinitely more delicious than any "preserved" fruit, as the term is usually applied—that is, to fruit "embalmed in sugar," and which retains none of the freshness of the natural state.

The process we should imagine to be a simple one, and is no doubt much the same as that employed by the French in preserving truffles, etc., though we think the specimens much more completely preserved than the so-called fresh fruit which we have seen sent from France.

We understand quite a business is carried on in this preserved fruit in Baltimore. The secret would, if as easily carried into practice as we should suppose, be worth a good deal to the country at large.

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NEW-YORK HORTICULTURAL SHOW.—We are gratified to be able to announce that the AMERICAN AGRICULTURAL ASSOCIATION has established a series of Horticultural Exhibitions for the present year in the city of New-York. While this number is going to press, the June exhibition is in preparation, and there is, we learn, promise of a fine display of fruits and flowers. The circular of the Association, embracing the list of Premiums for the autumnal exhibition, we now lay before our readers. We are glad to perceive that this Society, the officers of which are among our most zealous and influential citizens, has taken the cause vigorously in hand, and we trust, under its good management, that extensive influence may be brought to bear which the metropolis of the country ought to have exercised long ago in this matter.

AMERICAN AGRICULTURAL ASSOCIATION, NEW-YORK.—Premium List for the Horticultural Exhibition on the 15th and 16th September next :

BOUQUETS.

Premiums to be awarded by a committee of Ladies.	
For the best pair of Parlor Bouquets,.....	\$3
" second best,.....	2
" best pair of Hand Bouquets,.....	3
" second best,.....	2
" best Basket of Flowers,.....	3
" second best,.....	2

FLOWERS.

JUDGES.—Messrs. N. J. Becar, Brooklyn; Edgar Hicks, Brooklyn; T. M. Carpenter, New-York; Dr. Wm. W. Valk, Flushing; Peter B. Mead, New-York.

DAHLIAS.

For the best twelve varieties—self-colored,.....	5
" second best do.	3
" best six varieties—parti-colored,.....	5
" second best do.	3
" largest and finest display,.....	5
" best Seedling—self-colored,.....	5
" best Seedling—parti-colored,.....	5
" best display of Cut Flowers,.....	5
" second best do.	3

GREENHOUSE PLANTS.

For the best twelve,.....	5
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VEGETABLES.

JUDGES.—Messrs. Gouverneur Morris, Westchester; Francis Briell, Jersey City; J. W. Cudlipp and D. Holden, Bloomdale; James Mathewson, Morrisania.

For the best peck of Potatoes,.....	2
" second best do.	1
" best peck of Sweet Potatoes, raised within thirty miles south of New York,.....	2
" second best—same limitation,.....	1
" best 25 Onions,.....	2
" best 6 heads of Cabbage,.....	2
" second best 6 do.	1
" best 6 heads of Red Cabbage,.....	2
" best 12 Blood Beets,.....	2
" best 12 Carrots,.....	2
" best 6 heads of Endive—blanched,.....	2
" best 6 heads of Cardoon,.....	2
" best 6 stalks of Celery—blanched,.....	3
" second best 6 do do.	2
" best 12 roots of Salsify,.....	2
" best pair of Egg Plants,.....	2
" second best do.	1
" best half-peck Tomatoes,.....	2
" best 12 pods of Okra,.....	2
" best 12 Parsnips,.....	2
" best 12 Turnips,.....	2
" best 3 heads Broccoli,.....	2
" best 2 heads of Cauliflower,.....	3
" best display of Vegetables,.....	5

FRUITS.

JUDGES.—Messrs. Wm. T. McCoun, New-York; Charles Downing, Newburgh; J. Hayes, Newark; William Kelly, Rhinebeck; R. B. Parsons, Flushing.

GRAPES raised in the open air.

For the best 3 bunches, black, any foreign varieties,.....	5
" second best,.....	3
" best 3 bunches white, any foreign varieties,.....	5
" second best,.....	3
" best 6 bunches, Isabella,.....	2
" second best,.....	1
" best 6 bunches Catawba,.....	2
" second best,.....	1
" best 6 bunches any other native variety,.....	2

Raised under glass without artificial heat.

For the best 4 bunches, black, any varieties,.....	5
" second best,.....	3
" best 4 bunches, white, any varieties,.....	5
" second best,.....	3

Raised under glass with artificial heat.

For the best 4 bunches, black, any varieties,.....	3
" second best,.....	2
" best 4 bunches, white, any varieties,.....	3
" second best,.....	2

APPLES.

For the best 12 Autumn, one or more sorts,.....	2
“ second best do.	1
“ best 12 Winter do.	2
“ second best do.	1
“ finest and greatest display—named,.....	5
“ second best do.	3
“ best Seedling never before exhibited,.....	5

PEARS.

For the best 12 Autumn, one or more sorts,.....	3
“ second best do.	2
“ best 12 Winter do.	2
“ second best do.	5
“ largest and finest collection—named,.....	3
“ second best do.	5
“ best Seedling, never before exhibited,.....	5

PEACHES.

For the best 12 freestones, one or more sorts,.....	2
“ second best do.	1
“ best 12 clingstones do.	2
“ second best do.	1
“ largest and finest collection—named,.....	5
For the second best and finest collection—named,.....	3
“ best Seedling never before exhibited,.....	3

PLUMS.

For the best two dozen, one or more sorts,.....	3
“ second best,.....	2
“ largest and finest collection—named,.....	5
“ second best, do.	3
“ best Seedling never before exhibited,.....	5

QUINCES.—For the best twelve,.....	2
“ second best, do.	1

WATERMELONS.—For the best pair,.....	2
“ second best,.....	1

MUSKMELONS.—For the best three,.....	2
“ second best,.....	1

CRANBERRIES.—For the best two quarts, cultivated,...	2
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N. B.—Persons desirous of becoming members of the Association are informed that the entrance charge is \$5, and that, by paying this sum to any member of the Executive Committee, on the day of exhibition, their names will be brought before the Association at once, and if not elected the money will be returned to them.

Strangers bringing choice plants, &c., to the city from a distance, are notified that they will be taken care of by Mr. JAMES HOGG, 562 Broadway, opposite the rooms of the Association.

Persons intending to exhibit flowers, fruits, or vegetables, are particularly requested to notify Mr. HOGG, by mail or otherwise, in order that arrangements may be made for the proper exhibition of their specimens.

Officers of the Association.—Hon. LUTHER BRADISH, *President*; Hon. Theodore Frelinghuysen, James Lenox, Esq., James Boorman, Esq., A. H. Stevens, M. D., Thomas A. Emmet, Esq., Hugh Maxwell, Esq., Stephen Whitney, Esq., Shepherd Knapp, Esq., Hon. William T. McCoun, Cyrus Mason, D. D., W. A. Seely, J. S. Livingston, Esqs., *Vice Presidents*; A. P. Halsey, Esq., *Treasurer*; Andrew H. Green, Esq., *Cor. Secretary*; R. Ogden Doremus, Esq., *Rec. Secretary*; Luther Bradish, Th. Frelinghuysen, James Lenox, R. L. Pell, (Ch'n.,) Col. Edward Clark, Wm. Coventry H. Waddell, Archibald Russell, Shepherd Knapp, R. K. Delafield, D. P. Gardner, (Sec'y,) *Executive Committee*.

NOTABILIA.—By EVELYN.—The aromatic oils of plants keep off insects that would otherwise destroy the parts of fructification, and the aromatic oils of woods (cedar, cypress, rosewood, &c.) preserve

them from decay. The gates which were erected at Constantinople, in the time of Constantine, were of cypress, and stood eleven hundred years. (Sir H. Davy.)

The alburnum or sap wood of the birch tree, contains so much sugar and mucilage that it is sometimes used for bread in the north of Europe. (Sir H. Davy.)

The larger and thicker the leaves of a seedling, and the more expanded the blossoms, the better the fruit will be. Never select short leaved trees. (Sir H. Davy.)

The epidermis of hollow plants (canes, rattans, rye, &c.) contains siliceous earth. The rattan has so much siliceous earth, that it will give out sparks when struck with steel. (Sir H. Davy.)

The hexagonal form of the cells of the bee arises from a mechanical law, (the form which pliable hollow cylinders take when pressed together) and not from the instinct of the bee. Solitary bees make their cells uniformly circular. (Dr. Wollaston.)

More rain falls in New England than in old England, where the showers are more frequent, but not so heavy. (Dr. Dwight.)

The hills of New England are moist to their tops. Water is obtained by digging at less depths than in adjoining vales. (Dr. Dwight.)

A peculiar caterpillar is made to spin lace veils, thus: a paste of leaves of which the worm is fond, is spread upon a flat surface, and by drawing with oil the figure to be left open. The caterpillar is placed at the bottom of the inclined plane, and eats the paste, spinning as he ascends. A yard square of the lace weighs only $4\frac{1}{2}$ grains, Troy. (Babbage.)

Seaweed taken from a depth of 205 feet was of a green colour, showing how small a portion of solar light is requisite for the effect. (Humboldt.)

Of all the plants of the globe, none produces such a mass of nutriment in so small a space as the Banana. It produces in less than a year from the planting, fruit, the bunches of which weigh often 88 pounds. (Humboldt.)

The value of the manure annually applied to the land in Great Britain, exceeds in amount the foreign commerce of the whole empire. (Dr. Ure.)

As meat and clothing come from animals, the great inquiry in agriculture is, what crops will least exhaust the soil and sustain the largest number of animals. (Dan. Webster.)

STRAWBERRY BLOSSOMS.—Mr. HOWARD and myself examined Hovey's Seedling yesterday in my garden, and found the flowers perfect, the stamens being more fully developed than in any other variety, except Stoddard's Alpine, with the exception of half a dozen pistillate plants, on which no stamens could be perceived. My plants came from Mr. HOVEY last year, 1846. Res. yours. Luther Tucker. Albany, May 24, 1847.

[Our neighbor, H. W. SARGEANT, Esq., of Wodeneth, also lately showed us a bed of plants of this sort, which were sold him by Mr. HOVEY himself in 1845, as the genuine fruitful sort. These plants bear what are usually termed staminate blossoms. Mr. HOVEY has stated in an article on this subject, that his seedling is and always has been

a pistillate sort. This, indeed, appears to be the settled form which the variety commonly presents; yet how are we to account for the variation from it which appears in these stamen bearing plants just referred to, and which were received so directly and recently from the originator himself? Are there two Hovey's Seedlings, or does the sort vary?—ED.]

SALT FOR THE QUINCE TREE.—Sir, I perceive you recommend salt for the plum and other fruit trees. I can also inform you, from continual experience, that this substance is equally of advantage to the quince tree.

When I first came to this section of the state, twelve years since, I found, on the premises I purchased, half a dozen fair looking quince trees, but which I understood had never borne any fruit. On inquiry, I learned that the quince tree did not bear well in my neighborhood, and that my neighbors thought it useless to plant this fruit tree.

In making a drain from my kitchen, it so happened that it emptied its contents near the roots of one of the quince trees mentioned. This tree, the season after, came into bearing, and as a good deal of brine had been emptied into this drain, I supposed the salt might have produced its fruitful state.

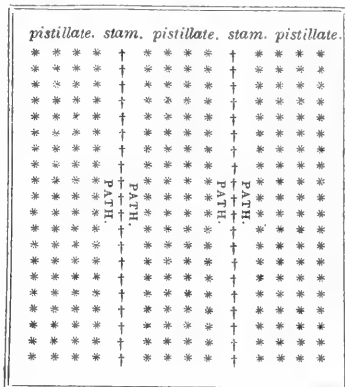
Acting on this supposition, I commenced applying salt early in the spring to the other quince trees at the rate of three quarts per annum to the surface of the ground under each tree, the trunks of which were then about as large as a man's wrist. They came into bearing the following season, and have given me constant and good crops every year since. My neighbors, who had never previously succeeded in growing quinces, have adopted my plan, and now find no difficulty; and I have myself planted more young trees, which are now beginning to bear well. Your obt. servant. *Oneida Co. May, 1847.*

HOW TO PLANT STRAWBERRIES.—Dear Sir: I have read with a good deal of attention the articles on the Strawberry Question, and am glad to find that at last all agree in one point, and, I suppose, to cultivators the root of the matter, viz. that we must choose pistillate sorts to have permanent beds and large crops of the finest fruit.

But since, as is said, the staminate outgrow the pistillates, and are likely, before long, when the two are planted in mixed beds, to crowd the latter out, I would be obliged to you for your opinion, in brief, about the best mode of planting the two classes; also a memorandum of the three or four kinds whose character is so established that there need be no hesitation about planting them. Yours, with respect. *A Constant Reader. Philadelphia, June, 1847.*

[ANSWER.—The annexed arrangement will show our correspondent a very simple and effectual mode of growing the finest strawberries, with the certainty of a large crop. In this * represents pistillate plants, occupying beds four feet wide; † represents staminate plants, occupying intermediate strips or beds one foot wide. Between the strip of staminate and the bed of pistillates, it will be seen that a walk intervenes on either side. This effectually prevents any intermixture of the runners—always supposing, as would of course be the case,

that the walks are kept free and clean. In this case the beds are supposed to be planted with four rows, and the plants to be kept in this form by cutting off the runners every season. Following this plan, and manuring between the rows every spring, the beds will continue in fine order for several years.



Among the best pistillate strawberries that have as yet come under our notice for the wide beds, are the *Black Prince*, *Hovey's Seedling*, *Hudson*, *Wiley*, *Bishop's Orange*, etc. The best stamen bearing sorts for the intermediate strips, are *Large Early Scarlet*, *Virginia Scarlet*, *Duke of Kent*, etc. These have perfect blossoms, and will always give a good crop of themselves, as well as abundantly fertilize the whole adjoining beds of pistillates.

Besides these, some of the strips may be occupied by the larger staminate, such as *Swainstone Seedling*, *Myatt's Eliza*, *Ross' Phoenix*, *Myatt's Deptford Pine*, etc., which will, in suitable soils where their flowers are perfect, not only fertilize the pistillates in the four feet beds, but bear crops of very large berries themselves.

APPLE BORER.—One of the greatest pests to the grower of the whole apple tree tribe, including thorn, quince, mountain ash, etc., is the insect known as the Apple-tree Borer (*Saperda bivitata*.) The perfect insect which appears here early in June, and flies at night, is a brown and white striped beetle, about half an inch long. This beetle deposits its eggs in the bark of the trees most frequently near the ground, or in the fork of the branches. The egg hatches, becomes a white grub, which perforates the trunk in all directions, and often destroys it, when the insects are numerous, as completely as if it were divided by a saw.

The first indication that gives notice to the common observer, of the presence of this borer, is the appearance of numerous small round holes in the bark of the trunk, looking as if the tree had been perforated by bucksot.

This insect is a difficult one to combat successfully. In some parts of New-England, where it has been allowed to multiply at its own pleasure, it has destroyed whole orchards.

We have studied its habits with some care this season, and offer the following suggestions as worthy the attention of those whose trees are attacked by it.

1st. Examine all trees liable to be attacked by this borer *early in the spring*, certainly before the first of May, in order, if possible, to destroy the larva before it comes out of the trunks in beetle form. This should be done, as far as possible, by *plugging up the holes with pieces of soft pine soaked in very strong tobacco water.**

2d. Before the time for the beetle to emerge from the tree, *i. e.* from the middle of May to the first of June in this region, wash the whole trunk of the tree from the surface of the ground beyond the fork of the principal branches, with a mixture of soft soap and tobacco water, made of the consistency of thick paint.

We have found, when this is brushed over the stems of the trees, it is for a long time so offensive to the insect that it will not deposit its eggs in the bark beneath it.

These two precautions, thoroughly put in practice, will, we trust, be found sufficient to put a stop to the ravages of the Apple Borer.

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DEATH OF S. G. PERKINS.—Since the publication of our last number, we learn with regret the death of one of our most highly valued correspondents, SAMUEL G. PERKINS, Esq. He died at his country seat at Brookline near Boston, the scene of his zealous horticultural labors and enjoyments for many years, at a ripe old age. We never remember to have met with an amateur, and rarely with a professional cultivator, whose knowledge of fruit trees, and whose successful treatment of them exceeded that of Mr. PERKINS. The few last years of his life were overshadowed by a partial loss of his sight; but even this could not wean him from the pleasures of his garden; and we remember with what interest he showed us, during our last visit at Brookline, peculiarities of growth in certain trees in his fine gardens, which would have escaped the notice of common observers, but to which he was profoundly conscious, through almost as much of the sense of feeling as that of sight.

The most excellent practical papers which have appeared in our columns, were chiefly dictated to an amanuensis. Our readers, no less than ourselves, will regret the loss to the gardening world of one so thoroughly versed in the practical knowledge of our favorite art.

POTATOE BLIGHT AN ATMOSPHERIC DISEASE.—After all the investigations made for ascertaining the *cause* of disease in potatoes, we have yet nothing conclusive. In 1844, in many parts of Vermont, the crop of potatoes was almost a total failure. In this immediate vicinity, the disease was hardly known. In 1845, in places which suffered in 1844, the disease had partially passed off, while in this vicinity there was almost a total loss. In 1846, not a single instance of the disease in this vicinity has come to my knowledge. In the winter of 1845-6, I had carried from my cellar as many as one hundred and fifty bushels of diseased potatoes,

* Made by steeping common tobacco, or the stalks of the same, in water.

and spread on about ten square rods in my garden, among young fruit trees—soil a secondary formation of coarse gravel, about two hundred and fifty feet above, and one mile from Lake Champlain, where the previous season potatoes had been planted and all rotted. In the spring of 1846, as many as fifty bushels more were spaded in the same ground. About ten bushels of sound and partially decayed potatoes were sorted from the last, when the whole mass of rotten potatoes was covered in the soil. Potatoes not totally decayed, grew so as nearly to cover the ground. They were cultivated, grew well, produced a good crop, were dug at the usual time, and put on the bottom of my cellar. More than one hundred bushels were put over them. They were taken out last month, and no symptom of disease could be detected among them. No manure or any other matter was applied either to the soil or potatoes, before or after gathering. Chauncey Goodrich. Burlington, Vt. June, 1847.

[We would call the attention of some of the English speculators on the potato disease, to the foregoing curious facts.—Ed.]

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WORCESTER COUNTY (MASS.) HORTICULTURAL SOCIETY.—This society held its annual meeting a few days since, at which the following gentlemen were unanimously elected its officers for the ensuing year:

Isaac Davis, *President*; Isaac Southgate, William Workman, Asa H. Waters, *Vice-President*; George Jaques, *Rec. Sec.*; John Milton Earle, *Cor. Sec.*; Frederic W. Paine, *Treasurer*; Anthony Chase, *Librarian*; F. W. Paine, George Jaques, Edmund F. Dixie, *Committee of Arrangements*.

The Society propose to have four exhibitions this year, one in July, one in August, one in September, and one in October.

Their new and beautiful Hall, in the Waldo Block, will afford spacious accommodation for the rich displays of fruits and flowers, which the increasing interest and improving taste of the horticulturists of the county can so easily furnish for the entertainment of their friends. *Worcester Telegraph.*

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ST. LOUIS HORT. SOCIETY.—To A. J. Downing, Esq.: I presume you have already observed that we have formed a horticultural society in St. Louis, and that you are among the honorary members thereof elected. I take pleasure in stating that the Society has begun its existence under very favorable auspices, and that prosperity and usefulness seem to be promised to it in a high degree.

Amid many doubts and misgivings, a first exhibition of flowers and vegetables was made on the first of May. The show far exceeded the most sanguine expectations of its projectors and of the community, and was visited by a very respectable number of our citizens. One of our largest public halls was well lined on all sides by a handsome and various collection of green-house plants, and the tables exhibited some beautiful bouquets and cut flowers, Tulips, Tree Pæonies, etc., and good samples of early vegetables. I sent you one of our daily newspapers containing the reports of some of our committees. The result has encouraged us

very much, and we have resolved upon another exhibition in September, when we anticipate a considerable increase in the number of contributors. Our Society as yet meets but monthly, and at each meeting new members are added. Among the topics particularly interesting to us in this vicinity, now before the society for discussion, are "The Pear Blight, its causes and remedies;" "The Curculio, how are its ravages to be prevented?" etc.

Our Society is the first movement of the kind west of the Mississippi; and we are happy in believing that it is likely to succeed *ab initio*.

The following is a list of the officers; Thomas Allen, *President*; Gen. William Milburn, *1st Vice President*; Capt. Lewis Bissell, *2d Vice President*; J. B. Crockett, *3d Vice President*; John C. Breddell, *Treasurer*; Edward Hazen, *Cor. Sec.*; A. B. Chambers, *Rec. Sec.*; Judge W. C. Carr, *Chairman of Council*; and there are five standing committees. Yours. *A Subscriber. St. Louis, Mo., May, 1847.*

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ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.—At a meeting of gentlemen from Albany and Rensselaer counties, held at the State Agricultural Hall, on Monday, the 21st June, the meeting was organized by calling JOEL RATHBONE, Esq., of Albany, to the chair, and STEPHEN E. WARREN, Esq., of Troy, was appointed Secretary.

The objects of the meeting were stated by HERMAN WENDELL, M. D., and remarks in relation to the propriety and expediency of organizing a Horticultural Society for the counties of Albany and Rensselaer, were made by Dr. WENDELL, B. P. JOHNSON and J. J. VIELE.

On motion of Dr. WENDELL, a committee of five were appointed to propose a constitution and by-laws for a Horticultural Society, to be called the Albany and Rensselaer Horticultural Society.

The committee retired; and on their return reported through their chairman a constitution and by-laws, for the consideration of the meeting—which after discussion and amendment, were unanimously adopted.

Gen. VIELE, from the committee to nominate officers, reported the names of the following persons who were unanimously elected:—

President—JOEL RATHBONE, Albany.

Vice-Presidents—HENRY VAIL, Troy; HERMAN WENDELL, M. D., Albany; ALEXANDER WALSH, Lansingburgh; V. P. DOUW, Greenbush.

Secretary—B. P. JOHNSON, Albany.

Treasurer—A. E. BROWN, Albany.

Managers—George B. Warren, Troy; J. McD. McIntyre, Albany; Albert Richards, West-Troy; S. E. Warren, Troy; E. P. Prentice, Albany; C. F. Crosby, Watervliet; James Wilson, Albany; Wm. Newcomb, Pittstown; Wm. Walsh, Albany.

Dr. Herman Wendell, S. E. Warren and J. McD. McIntyre were appointed a committee to prepare and report a premium list for the year 1847.

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CULTIVATION OF THE CRANBERRY.—SULLIVAN BATES of Bellingham, Mass., has issued a circular in relation to the cultivation of the Cranberry, from which we gather the following:

He states, that he has ascertained that there are three varieties of the Cranberry. Of these he thinks there is only one, which he calls the "Bell," that is adapted to a dry soil. He thus describes this variety: "The berry grows much in the form of an egg; it is inclined to grow, in a wild state, on the borders of Cranberry bogs, spreading its way to upland soils. It is much larger than the other kinds in its wild state."

He advises, that persons engaging in the cultivation of the article, should commence with the "Bell" variety; and he says, "by commencing with those which have been cultivated, or naturalized to a dry soil, they will much sooner accomplish their object, and with much less trouble and expense, as the plants multiply and increase abundantly." He states that from one or two thousand plants enough may be obtained in two or three years to plant "acres."

His directions for cultivation are, to select a moist soil, not liable to bake. Loamy soils, which are moderately dry, and contain a mixture of sand, he states, are well adapted to grow the Cranberry. He directs to prepare the soil "the same as for sowing grain, by plowing, harrowing and making it even, then mark it out in drills eighteen or twenty inches apart, putting the plants in the drills five or six inches apart; hoe them slightly at first, till the roots become clinched, and afterwards no other cultivation is needed. The plants may be expected to run together and cover the whole soil in two or three years."

Under cultivation, the yield of the Cranberry is stated to be "from 150 to 400 bushels per acre; its fruit is two or three times as large as the wild, and of a superior flavor; it readily keeps sound from the harvest of one year to that of the next. The fruit is generally gathered in September, with wire-tooth rakes, made for the purpose; one man generally gathering from thirty to forty bushels per day, with the aid of a boy to pick up the scattering fruit."

The roots may be planted either in spring or fall, Spring planting may be done from the time the ground can be worked till the tenth of May; fall planting may be done in October and November.

Mr. BATES has plants for sale, at the rate of eight dollars per thousand for quantities less than one thousand, and seven dollars per thousand in larger quantities.

Mr. B. G. Boswell, of Philadelphia, observes, in regard to shipping cranberries, that they should first "be run over a platform slightly inclined. The rotten or bruised fruit," it is said, "will not run off, but stick going down the platform, and are scraped off and thrown away. The perfect fruit is then put into tight barrels, and when headed up filled with water, and in this manner they arrive in Europe in perfect order, and have frequently sold in foreign ports at twenty dollars per barrel." S. H.

POSITION OF FLOWER BEDS.—It often happens that two different flower beds may be equally well managed, and flourish alike, yet one may be a mass of brilliancy, while the other exhibits little or no beauty. There are many flowers which always face the light or the sun; consequently the beds should be so placed that the spectator in the walk

or window, should look them full in the face. That is, the strongest light and the position of the spectator should always be on the same side of the bed. This will be found particularly necessary with the pansy or tri-colored violet, and some other of the smaller flowering plants.

BEST SITES FOR FRUIT GARDENS.—Edson Harkness, of Peoria, Ill., who has had much experience in fruit raising, makes the following statement in relation to the culture of the peach and grape, (which are partially tender,) which will be found to contain valuable information to western fruit cultivators, and which fully accords with experience elsewhere. "The peach and grape flourish best upon our highest lands, and upon a thin soil; and it does not seem expedient to cultivate these fruits extensively on any other. The beautiful gently swelling hills, called mounds, which are found interspersed all over our prairie country, are, so far as tried, peculiarly adapted to the culture of the peach and the vine. The exemption of the mounds from frost, after vegetation starts in the spring, gives them a great advantage over lower situations. During the last ten years, the wild grapes upon our highest lands have not been injured by frost,

while in the low lands or hollows, they have been destroyed nearly every alternate year. And when the peach trees are injured by the winter in every other situation, those on the mounds escape." T.

SUCCESSFUL TRANSPLANTING.—A Michigan correspondent of the Genesee Farmer says, "In the fall of 1845, and spring of 1846, I planted three hundred fruit trees of the various kinds, and have not lost one out of that number, notwithstanding the drouth so severe here last summer. Some of the apple trees have grown three feet; and peaches generally two feet, and some four to six feet. I set them on a piece of rich new land; dug the holes from three and a half to four feet in diameter, and from eighteen to twenty-four inches deep, filled them up with rich muck and black sand and loam. The earth that was thrown out of the bottom was not thrown back." All such good treatment can scarcely ever fail of similar success. No planter should ever expect to lose a single tree; and he need not if he treats all properly. Every tree that dies by removal, does so from abuse and bad treatment. Avoid such treatment, and all will live as a matter of course. T.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The monthly meeting was held as usual on Tuesday evening, June 15, 1847. The President in the chair.

Several tables of fine plants were shown on the occasion, and very beautiful baskets of cut flowers, also a number of well grown vegetables in great variety, and fruits. Of the latter, there were dishes of delicious Strawberries and Cherries, and also specimens of Apples in perfect preservation, of which several were fall varieties; their fine condition was effected by means of Kephart's patent fruit and vegetable preserver, the secret of which is, by means of ice to maintain a uniform temperature, so near the freezing point as to arrest the rotting as well as the ripening process, without danger of freezing them. They were presented by Messrs. Flack, Thompson, and Brothers.

The following premiums were awarded:

At the intermediate meeting, June 1, for the best two quarts of strawberries to John Austin, gardener to Isaac B. Baxter; for the next best strawberries, to Patrick Gallagher, gardener to Miss Graiz.

On the present occasion: By the Committee on Plants and Flowers.—For the best twelve Rocket Larkspurs, to Anthony Felten. For the best hothouse plants, to Archibald Henderson, gardener to T. W. Smith. For the second best ditto, to William Hall, gardener to C. Cope. For the best greenhouse plants to Archibald Henderson. For the second best ditto, to the same. For the most interesting collection of plants in pots, to Benjamin Gullis, gardener to Jacob Snider Jr. For the second best ditto, to Archibald Henderson. For the third best ditto, to Robert Kilvington. For the fourth best ditto, to Patrick Gallagher. For the best indigenous plants, to Archibald Henderson. For the best basket of cut flowers, and for the second best basket, to Robert Kilvington; and special premiums of one dollar each for bouquets to William Hall, gardener to C. Cope, Patrick Gallagher, gardener to Miss Graiz, and to A. Henderson.

By the Committee on Fruits—who report that they have examined and tasted of those apples which have been preserved by the vegetable and fruit preserver, invented by Mr. Kephart, comprising five varieties, viz. Cider, Bellefleur, Favorite, Germantown, and Newtown Pippin, and deposited by Flack, Thompson & Bro., and recommend a premium of three dollars. And for the best strawberries they recommend a premium of two dollars to Andrew Patton, gardener to Mrs. Kohne. For the second best, called "Buist's Prize," one dollar to Robert Buist. For the best cherries, three pounds, to Andrew Patton; and for the second best cherries, to Jno. Austin, gardener to Isaac B. Baxter.

By the Committee on Vegetables.—For the most interesting display, to Jno. Austin, gardener to Isaac B. Baxter. For the second best display, to Anthony Felten. For the third best display, to Patrick Gallagher, gardener to Miss Graiz. For the best artichokes, six in number, to Andrew Patton, gardener to Mrs. Kohne. And a special premium of one dollar for a fine display of Cucumbers and Tomatoes, exhibited by Wm. Hall, gardener to Caleb Cope.

The Treasurer presented his semi-annual statement of accounts, which was read and referred.

The Committee to superintend exhibitions reported a vacancy in their number, which the president filled by appointing Dr. James H. Bradford.

A communication to the Secretary, from Messrs. Elwanger and Barry of Rochester, N. Y., was read, describing the Northern Spy Apple, and declining the premium awarded at the last meeting, and presenting it as a donation to the Society.

The Corresponding Secretary reported a communication from Mr. A. H. Ernst, near Cincinnati, Ohio, in reply to his, announcing Mr. Ernst's election to honorary and corresponding membership, which was read.

THOS. P. JAMES.
Secretary.

MASSACHUSETTS HORTICULTURAL SOCIETY

Exhibition of Saturday, May 15, 1847.

GREEN-HOUSE PLANTS—The opening of the hall to the public for the season, was postponed from the first of the month to this day on account of the unusual backwardness of the season. In the bloom of Apricots, Cherries, and other trees, we notice three weeks difference between this and last year, and in Hyacinths nearly the same. A season so cold and unpropitious, gave but little promise to the public of a great display of flowers, but in this, no doubt, all who witnessed the exhibition were happily disappointed. It was one of the best displays of choice plants ever witnessed in the hall, perhaps the best. The Society are greatly indebted to the amateurs and other cultivators, who so liberally contributed their plants for the occasion.

From *M. P. Wilder*, President of the Society, a grand display of green-house plants in pots—one very large *Azalea indica* variegata; two smaller do.; *Azalea nudiflora* ornata, recently imported from Germany, hardy variety, (very fine); twenty plants of seedling *Azaleas*, all different, some of them very fine striped varieties; dirty *Calceolaria* seedlings, all distinct, very beautiful, of every color and tint; twelve very fine *Cineraria* seedlings; six *Petunia* seedlings; one Persian Yellow Rose; two Moss do.; White Unique Moss, (new); Bourbon, Madame Angeline, new, singular color and high scent; *Erica ventricosa* superba; two *Erica odorata*, white, fragrant; two *Epiphyllum Jenkinsonii*; one *Cactus flagelliformis*; one *Camellia coccinea*; and one *Clematis azurea grandiflora*, fine. Cut flowers—*Camellias*, Duchesse d'Orleans, Prati, Fimbriata, candidissima, cruciata, alba plena, and two new seedlings; *Roses*, Noisette, Lamarque, Bourbon, Paul Joseph, C. Beauharnais, B. Gouvan St Cyr, B. Edward Desfosses, T. Eugene Jourvain, Hybrid perpetual, Duc d'Alencon, (new), H. P. Melanie Cornu, and Noisette Solitaire in great quantity; also two new varieties of Perpetual Carnations.

From *Joseph Breck & Co.*, a great variety of Hyacinths, Narcissus, Crown Imperials, and other hardy flowers.

From *William Mellor*, twelve plants of splendid Seedling *Calceolarias*; eight do. *Pelargoniums*; one *Fuchsia* venus vitricx; also a great variety of cut flowers, including *Pelargoniums*, *Verbenas*, *Calceolarias*, *Roses*, &c.

From *T. H. Perkins*, by *William Quant*, six plants of beautiful Seedling *Cinerarias*; eight large do. of Double Crimson Stocks, very fine; twelve do. *Pelargoniums*, viz: *Ophelia*, *Matilda*, *Sylph*, *Speculum mundi*, *Alarm*, *Lady Duro*, *Lilac Perfection*, *Rienzi*, &c. A magnificent specimen of *Stephanos floribundus*, very fragrant, and the first plant ever exhibited in the rooms. Six do. *Fuchsias*, viz: *Defiance*, *Chauverii*, *Smith's Victoria*, *Williamsonii*, *Epsii*, *Paragon*; *Cactus Mayfly*; and fine plant of *Gloxinia*. Also fine cut flowers, including *Stephanotus*, *Roses*, *Pelargoniums*, *Gloxinias*, *Calceolarias*, &c.

From *John A. Lowell*, by *Thomas Willott*, a variety of curious and rare plants; among them that singular production of nature, the *Nepenthes distillatoria*, or Pitcher plant, *Cattleya intermedia*; very beautiful; *Maxillaria aromatica*; *Jatropha pandurifolia*; *Russelia juncea*, a splendid plant; and *Tabernaemontana coronaria*.

From *Azel Bowditch*, one Orange tree, with fruit and flowers; twelve plants of *Calceolarias*; one Moss tree Rose; two white Ivy leafed *Geraniums*; two pyramidal bouquets, and five flat do.; also cut flowers in variety.

From *Nahum Stetson*, South Bridgewater, one fine plant of *Cytisus racemosus*, and fine specimens of *Madam Desprez Rose*.

From *John Hovey*, one plant of *Euphorbia splendens*.

From *John L. Gardner*, by *J. Thomas*, nine varieties of Seedling *Verbenas*; Sweet Peas; one ornamental moss vase and pedestal, with five bouquets of flowers; also two parlor bouquets in moss vases, and one large flat bouquet composed of choice flowers, very beautiful.

From *James Nugent*, cut flowers, *Calceolarias*, *Cinerarias*, *Roses*, *Verbenas*, &c. &c., in great variety.

From *J. L. L. F. Warren*, two parlor and eight hand bouquets; twenty-six species of *Cactus*, some of them very curious.

From *J. N. Mandel*, one bouquet.

From *A. C. Fernald*, Revere place, one fine plant of Ivy leafed *Geranium*, beautifully trained.

From *O. H. Mathers*, a great variety of cut flowers, including *Lupinus Hartwegii*, *Roses*, *Calceolarias*, *Cinerarias*, *Abutilon*, with many fine specimens of beautiful plants.

From *William B. Richards*, cut flowers.

From *Hovey & Co.*, six plants of *Pelargoniums*, new varieties; and one *Hydrangea japonica*, new and beautiful.

AWARD OF PREMIUMS.

CALCEOLARIAS.—1st prize to *William Mellor*, \$3; 2d do. to *Mr. Bowditch*, \$2.

HYACINTHS.—1st prize to *Mr. Breck*, \$5.

BOUQUET, LARGE.—A prize to *John Thomas*, \$2.

SIX HAND BOUQUETS.—1st prize to *Mr. Bowditch*, \$2; 2d do. to *J. L. L. F. Warren*, \$1.

The Judges recommend a gratuity of \$5 to *John Thomas*, for his beautiful design and two moss vases of flowers.

PELARGONIUMS.—1st premium on Class II, to *Wm. Quant*, \$6; 2d do. to *Wm. Mellor*, \$4.

CINERARIAS.—1st premium to *Wm. Quant*, \$3.

FUCHSIAS.—1st premium to *Wm. Quant*, \$6.

VARIOUS SOGS.—Best display, not less than 12 plants, 1st premium to *Wm. Quant*, \$3; 2d do. to *A. Bowditch*, \$5.

CUT FLOWERS.—1st premium to *Wm. Quant*, \$3, 2d do. to *James Nugent*, \$2.

GRATUITIES.—To *M. P. Wilder*, President of the Society, for his splendid display of greenhouse plants, \$3. To *Thomas Willott*, for plants from *John A. Lowell*, \$5. To *Henry Reed*, gardener to *Nahum Stetson*, for *Cytisus racemosus*, \$3.

FRUITS.—On the opening of our hall to-day, for the present season, *John Fisk Allen*, Esq., of Salem, presented twelve varieties of ripe grapes, dished up in his usual fine style, viz. Early Black July, Miller's Burgundy, Early White of the French and Pimaston white cluster (these four are the earliest grapes, and the Pimaston the earliest and the best of these.) Zinándal Ferral, Black Hamburg, White Chasselas, Chasselas de Bar-Sur-Aube, Aleppo, White and Grizzly Frontignan; also Black Figs of St. Michael.

VEGETABLES.—From *O. H. Mathers*, by *Thomas Needham*, a variety of Cucumbers, among which were the Manchester and Weeden's Prize.

From *Orr N. Towne*, a brace of cucumbers.

J. Fisk Allen exhibited Tomatoes, April 24 and May 1.

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Saturday, May 22, 1847.

FLOWERS.—From *M. P. Wilder*, President of the Society, 12 plants of his fine new seedling *Calceolarias*, spotted and variegated, very beautiful; three varieties of *Ericas* in full bloom; cut flowers, including fine specimens of *Camellias*, among which we noticed a fine new seedling of regular formation, color light pink, slightly striped with white, which promises well, also *Henry Favre*, *Sarah Frost*, *Double White* and other varieties. *Roses*: *Tea*, *Princess Adelaide*, new, very large pale yellow, high scented; *Noisette Solitaire* in quantity; this variety proves to be an abundant bloomer under proper treatment as we have witnessed; we are informed that the gardener cut 100 Rose buds from one plant on May morning; also *Bourbon* and *Hybrid perpetual Roses*, and specimens of forced Ghent *Azaleas*.

From *Lucinda Spaulding*, South Reading, a fine plant of *Cactus* extensus, in full bloom.

From *A. Bowditch*, two round pyramids, six hand, and one large flat vase or mantel bouquet. Ten not plants, viz: one seedling *picotee Pink*, *Prairie Rose*, *Lechenaultia formosa*, *Petunia*, *Erica ventricosa superba*, *Sedum var Fuchsias*, and two *Cactus*. Also cut flowers, principally *Roses*.

From *S. R. Johnson*, fine specimens of *Pyrus japonica*.

From *R. M. Copeland*, very fine Hyacinths and *Cactus*.

From *Joseph Breck & Co.*, Hyacinths in great variety; five varieties of *Phlox subulata*; *Phlox decumbens* and *stolonifera*, *Pulmonaria virginica*, *Iris pumila* and *cristata*, *Pansies*

in variety; *Pæonia tenuifolia* and *hybrida*; *Primula polyantha* and *vera*; *White Swan*, and other early double Tulips. Crown Imperial, double and single red, yellow, &c. *Cynoglossum ophthaloides*; *Fumaria formosa* and other hardy herbaceous and bulbous flowering plants. Also, double and single Peach blossoms, Crab Apple, Pear and other fruit flowers. These were introduced not only for their beauty, but also to show the extreme lateness of the season in comparison with the last. On the 5th of May, 1846, the apple trees were in full bloom, now the buds are only beginning to show their colour. The blossoms of the Pear are not yet fully developed, while the Peach, Cherry, and Plum are in perfection.

From *J. W. Mandel*, two bouquets; cut flowers, comprising *Pelargoniums*, *Heliotrope*, *Verbenas*, *Roses*, &c.

From *O. H. Mather*, by *Thomas Needham*, fine cut flowers, including *Verbenas*, *Pelargoniums*, *Cinerarias*, *Lupines*, *Phlox Drummondii*, *Abutilon*, *Acacia*, *Cytus*, *Kennedia racemosa*, *Primulas*, &c., &c.

From *J. L. F. Warren*, two *Fuchsias* and one plant of *Burchelia speciosa*, rare and beautiful; and one *Calistemon splendens*. Also, one table and six hand bouquets.

From *T. H. Perkins*, by *William Quant*, a magnificent plant of *Stephanotis floribunda*, one of *Cineraria*, two *Fuchsias*, three *geraniums*, and one large mantel bouquet.

From *Hovey & Co.*, fine Pansies.

From *J. L. Gardner*, by *J. Thomas*, six fine plants of *Verbena*, entered too late for premium. Also a fine display of cut flowers, including sweet peas in great variety, fine seedling *Pelargoniums*, *Nemophylla insignis grandiflora*, *Calceolarias*, *Nasturtiums*, &c.

AWARD OF PREMIUMS.

For the best large Mantel bouquet, 1st premium to *Azel Bowditch*, \$2; 2d do. to *Wm. Quant*, \$1.

For the best six Pot Plants, 1st premium to *Wm. Quant*, \$2; 2d do. to *Azel Bowditch*, \$1.

The Committee award a gratuity of five dollars to *Wm. Quant*, for a splendid plant of *Stephanotis floribunda*. Also, to *R. M. Copeland*, a gratuity of three dollars for a fine display of beautiful *Hyacinths*.

FRUITS.—*Mr. Allen*, of Salem, made a fine display of his splendid Grapes—viz: *Ferral*, *Black Hamburgh*, *Zinfandel*, *early Black July*, *Grizzly Frontignan*, *Pittamston white cluster*, and white *Chasselas*. Also, *Black* and white *Figs* of *St. Michael*, *Azores*. The *Pittamston white cluster*, is a small round berry, and when fully ripe of a fine yellow colour; it is the earliest Grape, and will ripen in from ten to twenty days less time than the *Chasselas* or sweet water. It is a very desirable variety.

VEGETABLES.—From *T. H. Perkins*, by *Wm. Quant*, some fine *Asparagus*.

Saturday, May 29, 1847.

FLOWERS.—From *Messrs. Winship*, flowering shrubs, including fine specimens of rare *Spiræas*, *Purple Beech*, *Azaleas*, *Pyrus Japonica*, *Wistaria*, double-flowering *Peach*, with a great variety of other cut flowers.

From *Wm. Mellor*, Tulips in variety, *Pelargoniums*, *Verbenas*, *Pansies*, *Iberis*, &c. Also, fine seedling *Polyanthus*.

From *E. M. Richards*, Tulips in variety, *Trillium pictum*, *Dodecatheon*, and other cut flowers.

From *Miss Russell*, a basket of flowers tastefully arranged; *Wistarias*, &c.

From *J. L. Gardner*, by *J. Thomas*, three plants of *Verbenas*, one *Tropeolum minor*, seedling *Calceolaria*, and *Pelargonium Matilda*; one beautiful Moss Vase and flowers, and forty varieties of Tulips.

From *J. L. F. Warren*, eight pot plants, viz: *Rhododendron*, var. *Euphorbia splendens*, *Justicia carnea*, *Justicia calytricha*, two double Chinese *Primroses*, and two do. rose colored; also, six flat bouquets, five round do.; a fine display of *Rhododendrons* and other cut flowers.

From *Peter Ivory*, Tulips.

From *Edward Winslow*, fine Tulips.

From *Parker Barnes*, fine Pansies in variety; seedling *Verbena*, ever-blooming *Pinks*, and *Azalea Gledanesii*, a fine variety, white striped with scarlet.

From *Lucinda Spaulding*, South Reading, a plant of *Cactus*.

From *Azel Bowditch*, seven hand bouquets, six pot plants, and cut flowers in variety.

From *Augustus Aspinwall*, a splendid display of *Roses*.

From *Samuel Walker*, fine Tulips.

From *W. B. Richards*, fine Tulips, *Polemonium Mexicanum*, and other cut flowers; one fine bouquet, and a quantity of the *Lily of the Valley*.

From *Eben'r Wright*, Tulips in great variety.

From *Joseph Breck & Co.*, 200 fine Tulips, four varieties of *Pæonies*, *Dodecatheon Meadia*, two varieties; a beautiful new *Aquilegia*, (*A. jucunda*), *Iberis Tenoreana*, fine perennial; *Wistaria sinensis*; *Pulmonaria Virginica*, *Lychnis floscuoli*, *Phlox stolonifera* and *divaricata*; variegated *Mountain Ash*; shrubs and cut flowers in variety.

From *James Nugent*, fine Tulips, *Pelargoniums*, *Roses*, *Verbenas*, and a variety of cut flowers.

From *Hovey & Co.*, fine Pansies, and two bouquets.

AWARD OF PREMIUMS.

The Judges on Tulips, Pansies, Pot Plants and Bouquets, Messrs. *Quant*, *Richards* and *Dutton*, awarded as follows:

TULIPS.—For the best thirty distinct varieties, a premium of \$5 to *Joseph Breck & Co.*; for the second best thirty varieties, the 2d premium of \$6 to *Samuel Walker*.

PANSIES.—For the best twelve distinct varieties, a premium of \$4 to Messrs. *Hovey & Co.*, by *J. H. Burns*; for the 2d best twelve varieties, a premium of \$3 to *Joseph Breck & Co.*; and a gratuity of \$2 to *Parker Barnes*, for a pan of fine varieties.

POT PLANTS.—For the best six Pot Plants, a premium of \$2 to *J. L. Gardner*; for the second best do., \$1 to *J. L. F. Warren*. The Judges award to *J. L. Gardner*, by *John Thomas*, a gratuity of \$2, for a moss vase with flowers.

BOUQUETS.—For the best six hand bouquets, a premium of \$2 to *Azel Bowditch*; for the second best do., \$1 to *J. L. F. Warren*.

FRUITS.—By *Mr. John Fisk Allen*, Salem, Grapes, viz: *Chasselas Bar-Sur-Aube*, *Black Hamburg*, *White Frontignan*, *Sweetwater*, *Zinfandel Aleppo*, *Grizzly Frontignan*. Also, *White Figs*.

VEGETABLES.—From *O. H. Mather*, by *Thomas Needham*, fine Cucumbers, var. *Black Spine*.

From *T. H. Perkins*, by *Wm. Quant*, *Asparagus* and *Black Spine Cucumbers*.

Saturday, June 5, 1847.

FLOWERS.—From *M. P. Wilder*, *President of the Society*, a rich collection of rare cut flowers, viz: fine *Cactus* in variety; two new spotted seedling *Calceolarias*, and a variety of others from his collection; *Camellias*, var. *Alba plena* and *Prattii*; *Fuchsias*, *Salteri major*, *Paragon*, *Bowdin*, *Brookmanii*, *Chauverii*, and *robusta*; six or eight varieties of elegant *Cinerarias*; *Pæonias*, *Eliza*, *Contributor*, *Tunandra*, and a fine plant of *Hebe*, well grown and in perfection; six varieties of *Lilacs*, viz: *Duchess d'Orleans*, *De Nemours*, *Charles X.*, *Prince Nolger*, double *Purple*, and a dark red.

From *Messrs. Winship*, a fine, round, pyramidal bouquet, and a great variety of cut flowers, as follows: *Ranunculus repens*; *Veronica gentianoides*; *Arundo striata*; *Syringa laciniata*; *Bay-leaf Willow*; *Pyrus spuria*; *Azalea nudiflora*, *Pontica*, and others; *Podalyria Australis*; *Keria Japonica*; *Calycanthus floridus*; *Aesculus flava* and *pallida*; *Ulmus crispus*; *Spartium scoparium*; *Spiræa*, *hypericifolia*, *oblongifolia*, *lævigata*, *ulmifolia*, *flexuosa*, *daurica*, *Siberica*, *Reevesii*, *trilobata*, *chamedrifolia* and *fol. variegata*; *Crataegus flore pl. and rubra*; *Mespilus grandiflora*; *Pæonies* in variety; *Lonicera*, *Caucasica*, *Tartarica*, *albiflora* *Xylosteum*; *Viburnum lantago*; *Amsonia latifolia*; *Balsamita odorata*; *Ribes alpina*; *Iris*, *Germanica*, *purpurea*, *lurida* vel *sordida*, *pallida*, *Virginica*, *Florentina albidia*; *Ilex crispus*; *Sedum*; *Trollius Europæus*; *Vinea major*; *Hemerocallis flava*; *Asclepias vincetoxicum*; *Corydalis formosa*, &c. This collection occupied the whole of one of the large round stands, and attracted much attention, from the good taste displayed in the arrangement.

From *Joseph Breck & Co.*, fine specimens of *Castilleja coccinea*, a beautiful indigenous flower; a branch of *Wistaria sinensis*, with more than fifty racemes of its elegant flowers drooping in the most graceful manner. The plant from which this was taken, was grown in the open air without the least protection, and made a growth, last season, of twenty-two feet in one direction. Tulips, in great variety and perfection, including some very superb double varieties; *Pæonia arborea Banksii*, and a variety of herbaceous sorts; *Iris*

in variety; Pansies; *Lychnis floscucli*; *Fritillaria Persica*; *Dodecatheon Meadia*; *Hesperis matronalis*; *Phloxes*, *Iberis*, and a variety of other herbaceous plants. Also, Persian Lilac, Red and White Tartarian Honeysuckle, variegated Mountain Ash, &c. This was one of the largest collections in the Hall, and attracted universal attention, from the many rare and perfect specimens it contained.

From *Augustus Aspinwall*, a fine display of Perpetual and other Roses.

From *Parker Barnes*, ever-flowering Pinks and fine Pansies.

From *Ebenezer Wight*, Tulips in variety.

From *T. H. Perkins*, by *Wm. Quant*, six pot plants, viz: *Fuchsia*, paragon. *Victoria*, *Epsii*, *Williamsonii*, (a seedling,) and *Pelargonium Victory*. Also, a splendid pyramidal bouquet. The pot plants were fine, and remarkably well-grown specimens.

From *A. Bowditch*, eight hand bouquets.

From *J. L. L. F. Warren*, six hand and one pyramidal bouquets; *Pæonia arborea Banksii*, and *papaveracea*; *Daisies*, *Narcissus*, *Dodecatheon* two varieties, *Tartarian Honeysuckles*, &c.

From *O. H. Mather*, cut flowers in variety, including fine *Pelargoniums*, *Roses*, *Abutilon*, *Phlox Drummondii*, *Cinerarias*, *Collinsias*, *Verbenas*, &c.

From *Wm. Kenrick*, by *Miss Russell*, one large oval bouquet, composed of a great variety of flowers; also, cut flowers, including *Wistarias*, *Pæonia arborea Banksii*, *Kerria Japonica*, variegated *Horse Chestnut*, *Purple Beech*, &c.

From *Wm. B. Richards*, one large bouquet, *Polemonium Mexicanum*, *Lily of the Valley*, &c.

From *John Hovey*, two bouquets, and *Pæonia arborea Banksii*, &c.

From *J. L. Gardner*, by *J. Thomas*, eight pot plants, viz: six *Pelargoniums*, one seedling *Cineraria*, and seedling *Verbenas*. Also, one superb moss vase and bouquet, and large bouquet for vase.

From *James Nugent*, cut flowers in variety, including fine *Pelargoniums*, *Verbenas*, *Roses*, fine *Gladiolus*, &c.

From *E. M. Richards*, cut flowers, viz: *Iris*, *Tulips*, *Dodecatheon*, *Lychnis floscucli*, &c.

From *J. W. Mandel*, one large flat bouquet.

AWARD OF PREMIUMS.

For the best large bouquet, a premium to *Wm. Quant*, of \$2.

For the second best large bouquet, a premium to the *Messrs. Winship*, of \$1.

To *Azel Bowditch*, for the best six hand bouquets, a premium of \$2.

To *J. L. L. F. Warren*, for the second best six hand bouquets, a premium of \$1.

For a design, a moss Vase with flowers, a premium to *J. Thomas*, of \$2.

For the second best do., to *Miss Russell*, a premium of \$1.

For the best six pot plants, to *Wm. Quant*, a premium of \$2.

For the second best six do., to *J. Thomas*, a premium of \$1.

FRUITS.—The Grapes presented this day by *John Fisk Allen*, Esq., of Salem, were very fine. We noticed among them, extra fine specimens of the *Zinfundal*, as also fine bunches of the *Black Hamburg*, *White Chasselas*, *Aleppo*, and *Grizzly Frontignan*. Mr. Allen also exhibited a box of fine ripe *May Duke Cherries*, *Black Figs*, and *Bergamot Limes*.

A dish of sweet Apples, by *A. Moore*.

W. E. Carter, of Cambridge, presented some *Hubbardston Nonsuch Apples*.

VEGETABLES.—From *O. H. Mather*, by *Thos. Needham*, a brace of Cucumbers, and some very fine Lettuce.



Horticulturist

AND

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No. 2.

A FEW MILES east of Boston, boldly jutting into the Atlantic, lies the celebrated promontory of NAHANT. Nature has made it remarkable for the grandeur and bleakness of its position. It is a headland of an hundred acres, more or less, sprinkled with a light turf, and girded about with bold cliffs of rock, against which the sea dashes with infinite grandeur and majesty. No tree anciently deigned to raise its head against the rude breezes that blow here in winter, as if tempest-driven by Boreas himself; and that, even in summer, make, of Nahant, with its many cottages and hotels, a refrigerator, for the preservation of the dissolving souls and bodies of the exhausted population of Boston, in the months of July and August.

At the present moment, the interesting feature at Nahant, after the Ocean itself, is, strange to say, one of the most remarkable gardens in existence. We mean the grounds of the private residence of FREDERIC TUDOR, Esq., a gentleman well known in the four quarters of the world, as the originator of the present successful mode of shipping ice to the most distant tropical countries; and, we may here add, for the remarkable manner in which he has again

triumphed over nature, by transforming some acres of her bleakest and most sterile soil into a spot of luxuriant verdure, fruitfulness and beauty.

To appreciate the difficulties with which this gentleman had to contend, or, as we might more properly say, which stimulated all his efforts, we must recall to mind that, frequently, in high winds, the salt spray drives over the whole of Nahant; that, until Mr. TUDOR began his improvements, not even a bush grew naturally on the whole of its area, and that the east winds, which blow from the Atlantic in the spring, are sufficient to render all gardening possibilities in the usual way nearly as chimerical as cultivating the volcanoes of the moon.

Mr. TUDOR's residence there now, is a curious and striking illustration of the triumph of art over nature, and as it involves some points that we think most instructive to horticulturists, we trust he will pardon us for drawing the attention of our readers to it at the present time. Our first visit to his grounds was made in July, 1845, one of the driest and most unfavorable seasons for the growth of trees and plants that we remember. But at that time, perhaps, the best possible one to test the merits of the mode

of cultivation adopted, we found Mr. Tudor's garden in a more flourishing condition than any one of the celebrated places about Boston. The average growth of the thriciest standard fruit trees about Boston, at that time, was little more than six inches to a foot. In this Nahant garden it was two feet, and we measured shoots on some of the standard trees three feet in length. By far the largest and finest cherries we tasted that season, were from trees growing there, and there was an apparent health and vigor about every species within its boundary, which would have been creditable anywhere, but which at Nahant, and in a season so unfavorable, quite astonished us.

The two strong points in this gentleman's gardening operations at Nahant, appear to us to be the following: First, the employment of screens to break the force of the wind, producing thereby an artificial climate; and second, the thorough preparation of the soil by trenching and manuring.

Of course, even the idea of a place worthy of the name of a garden in this bald, sea-girt cape, was out of the question, unless some mode of overcoming the violence of the gales and the bad effects of the salt spray, could be devised. The plan Mr. Tudor has adopted is, we believe, original with him, and is at once extremely simple, and perfectly effective.

It consists merely of two, or at most three parallel rows of high open fences, made of rough slats or palings, nailed in the common vertical manner, about three inches wide, and a space of a couple of inches left between them. These paling fences are about sixteen feet high, and usually form a double row, (on the most exposed side a triple row,) round the whole garden. The distance between that on the outer boundary and the next interior one is about four feet. The garden is also intersected here and

there by tall trellis fences of the same kind, all of which help to increase the shelter, while some of those in the interior serve as frames for training trees upon.

The effect of this double or triple barrier of high paling is marvellous. Although like a common paling, apparently open and permitting the wind free passage, yet in practice it is found entirely to rob the gales of their violence, and their saltness. To use Mr. Tudor's words, "it completely sifts the air." After great storms, when the outer barrier will be found covered with a coating of salt, the foliage in the garden is entirely uninjured. It acts, in short, like a rustic veil, that admits just so much of the air, and in such a manner as most to promote the growth of the trees, while it breaks and wards off all the deleterious influences of a genuine ocean breeze—so pernicious to tender leaves and shoots.

Again, regarding the luxuriant growth, which surprised us in a place naturally a sterile gravel, we were greatly struck with the additional argument which it furnished us with in support of our favorite theory of the value of trenching in this climate. Mr. Tudor has, at incredible labor, trenched and manured the soil of his garden three feet deep. The consequence of this is, that, although it is mainly of a light porous texture, yet the depth to which it has been stirred and cultivated, renders it proof against the effects of drouth. In the hottest and driest seasons, the growth here is luxuriant, and no better proof can be desired of the great value of thoroughly trenching, as the first and indispensable foundation of all good culture, even in thin and poor soils.

It is worthy of record, among the results of Mr. Tudor's culture, that, two years after the principal plantation of his fruit trees was made, he carried off the second prize for pears, at the annual exhibition of the Mas-

sachusetts Horticultural Society, among dozens of zealous competitors, and with the fruit most carefully grown in that vicinity.

We have observed also, and noted as indicative of no small degree of practical skill, that in various quarters of the garden are standard trees, apples and pears especially, that have been transplanted from Boston, with large heads and trunks, six or eight inches in diameter, and are now in a state of complete luxuriance and fruitfulness.

There are, of course, but few individuals who have the desire and the means thus to weave a spell of freshness and beauty over a spot which nature has created so stern and bald; perhaps there are still fewer who would have the courage to plan and carry out improvements of this kind, to the attainment of so beautiful a result, in the very teeth of the elements. But there are many

who may learn something valuable from Mr. TUDOR's labor in the cause of Horticulture. There are, for example, hundreds along the sea coasts, to whom gardening of any sort is nearly impossible, from the injurious effects of breezes loaded with salt water. There are, again, many beautiful sites that we could name on the shores of some of our great inland lakes, and the number is every day increasing, sites where the soil is deep and excellent, and the skies warm and bright, but the violence of the vernal and autumnal winds is such, that the better culture of the orchard and garden makes little progress.

In all such sites, Mr. TUDOR's Nahant screens for sifting the air, will at once obviate all the difficulty, temper the wind to the tender buds, and make for the spot a soft climate in a naturally harsh and bleak aspect.

TWO NEW AMERICAN CHERRIES.

BY F. R. ELLIOT, CLEVELAND, OHIO.

DEAR SIR—I have the pleasure of forwarding to you outlines and descriptions of two seedling cherries, originated by Professor KIRTLAND of this place. They have borne very excellent crops for two seasons past, and we have compared them with all the leading foreign and native sorts, and cannot but rank them among the *best*. We have, among the seedlings, *many* equal to Black Heart; but as we do not consider a new variety, merely equal to that fruit, as one any longer worthy of attention, we shall say nothing of such seedlings. From about two hundred seedling trees, we find about thirty which, in the quality of their fruit, will not, we think, rank below Black Heart. Out of these thirty, we think, taking Elton

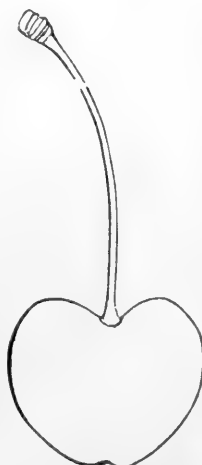


Fig. 8. *Rockport Bigarreau*

as a standard, we shall find seven or eight that are truly superior. For the present, I will offer to the attention of your readers only the two following, both raised by Professor KIRTLAND, from the seeds of the Bigarreau.

1. THE ROCKPORT BIGARREAU.

Fruit large, round heart-shaped; colour, when fully ripe, a most beautiful light, clear, deep red, shaded into a delicate pale amber-

coloured ground, with occasional spots like the Napoleon Bigarreau, but not so numerous. Flesh of a rather yellowish tinge, firm, juicy and sweet, with a rich flavor, superior, we think, to any variety in cultivation. It ripens, at least, two weeks earlier than the Napoleon Bigarreau. Pit, oblong-oval. Tree of strong upright growth.

II. THE CLEVELAND BIGARREAU.

This excellent fruit has the merit of being among the first of its class to ripen. It is at full maturity with the Black Tartarian, while its parent, the Old Bigarreau, ripens nearly two weeks later.

Fruit of the largest size, considerably like that of the Bigarreau; regular in form, round

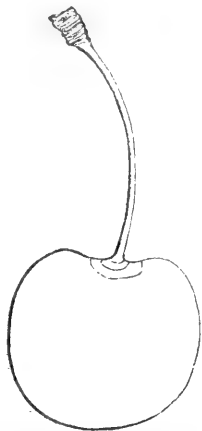


Fig. 9. *Cleveland Bigarreau*.

heart-shaped, marked by a broad deep suture half-way round. Colour, bright, clear, delicate red, on amber-yellow ground. Stalk tolerably stout, about an inch and a half long, curved. Flesh, pale yellowish white, firm, juicy, sweet, with the rich flavor of the Elton. Pit, small.

You will observe, that I send you this account, fully conceding that, although the list of fine cherries is, perhaps, less extended than that of any other like valuable fruit, it is hardly worth while to notice any new ones, and certainly not to cultivate them, unless they possess *superior* qualities. It is questioned by some of us in this section of Ohio, whether a seedling of our own, alike valuable, with any foreign variety, is not more valuable as being more hardy for cultivation here. This, as well as the fact that the two varieties just described are of earlier maturity than the standard sorts which they most resemble, seem to me to render them well worthy of the attention of the pomologist. Very truly yours,

F. R. ELLIOTT,

Lake Erie Nursery, Cleveland, Ohio, June 29, 1847.

REMARKS ON THE SCIENCE OF GARDENING—No. 3.

BY DR. WM. W. VALK, FLUSHING, L. I.

In our No. 1, upon this interesting subject, we stated, at the conclusion of the article, that "but for our instrumentality," some of your readers might never, perhaps, obtain the benefit to be derived from viewing the matter properly, or, at least, so far as it has been elucidated in the writings of English horticulturists. By Mr. PAXTON, or some one of the numerous and able writers in his magazine, gardening *as a science* has been most interestingly discussed, and it is from this source we derive the materials of

our serial communications, and claim for them no more merit than may be accorded to the modifications of the ideas and language of other authors, and their adaptation to the American reader. We so stated at first, and here repeat it.

The reading public have long been tutored in error, by those who have been considered physiological authorities: this is a sweeping and bold assertion; but we are led to make it by the perusal of a work by a scientific German—*Liebig's Organic Che-*

mistry. Appearing a few years ago, it created no little sensation, and very possibly may effect an entire revolution in the study of vegetable physiology. As an analytic chemist, the author ranks inferior to none; and the views he takes of the chemical processes engaged in the nutrition of vegetables are so striking, that it becomes imperative to direct our attention to them in the course of these articles, in order to exhibit truths which have not been heretofore noticed. A few leading paragraphs will be extracted, and such comments appended as may be required to render more lucid the admirable views of the author.

To understand the culture of a plant, the elements which constitute, or exist in its structure, must be known; therefore the first part of Liebig's work is "devoted to the examination of the matters which supply the nutriment of plants, and of the changes which these matters undergo in the living organism." Subject to the operation of the vital principle of a plant, which must never be lost sight of, it becomes an object of the greatest moment to determine what the organs of a vegetable (that is, its tissue or structure,) and the fluids they contain, are composed of; for if *these* be ascertained, the gardener is prepared to supply it with those substances which can be converted into nutritive aliment; whereas, if he be ignorant of these leading points, (and how many gardeners know any thing about them?) he is just as likely to poison his plants, as to promote their healthy development; for "the food which can serve for the production of *all* the organs of a plant, must necessarily contain all its elements."

"The substances," says Liebig, "which constitute the principal mass of every vegetable, are compounds of carbon, with oxygen and hydrogen in the proper relative proportions to form water. Woody fibre,

starch, sugar and gum, for example, are such compounds of carbon with the elements of water. In another class of substances containing carbon as an element, oxygen and hydrogen are again present, but the proportion of oxygen is *greater* than would be required for producing water by union with the hydrogen. The numerous *organic acids* met with in plants, belong, with few exceptions, to this class. A third class of vegetable compounds contain carbon and hydrogen, but *no oxygen*, or less of that element than would convert the hydrogen to water. These may be regarded as compounds of carbon with the elements of water and an excess of hydrogen. Such are the volatile and fixed oils, wax, and the resins. Many of them have acid characters. The juices of all vegetables contain organic acids, generally combined with the inorganic bases or metallic oxides; for these exist in every plant, and may be detected in its ashes. *Nitrogen* is an element of vegetable albumen and gluten; it is a centient of the acids, and of what are termed the 'indifferent substances' of plants, as well as of those peculiar vegetable compounds which possess all the properties of metallic oxides, and are known as 'organic bases.' It follows, from the facts thus far detailed, that the development of a plant requires the presence—first, of substances containing carbon and nitrogen, and capable of yielding these elements to the growing organism. Secondly of water and its elements; and lastly, of a soil to furnish the inorganic matters, which are likewise essential to vegetable life."

The intelligent reader will at once recognize in this quotation, the leading principles of vegetable culture; the main facts are not new, nor are they doubted by any philosophic observer; but they have been *misunderstood* and *misapplied*, as shall be

made to appear in due time. It has been and will be our desire to avoid all dark and mysterious terms—terms strictly professional; but as those who allude to science, must, to a certain extent, employ its phraseology, words have been cited, which are in the mouths of numbers, and are to be heard every day, though in point of fact, they are very little understood, and much less appreciated.

In order to convey some idea of the express meaning of these terms, a few words may be said upon each of the vegetable constituents above noticed, though not strictly in the order in which they occur.

Carbon. This substance enters largely into the composition of all vegetable products. The word implies coal, or charcoal, and is most readily interpreted by referring to the charcoal of wood—that substance which remains after its slow combustion, particularly in those close iron retorts which are used in the manufacture of pyroligneous acid. Its quantity is very great, though various, and may be stated as approaching to a little less than half the entire weight of the dried wood.

Oxygen, as far as we know any thing of it, is an air or gas:—it is that vital principle of the atmosphere which sustains respiration, light and flame; and exists *invariably, at every season*, in the proportion of 21 parts of every 100 of air, by measure.

Nitrogen is that inert portion of air remaining after the removal of the oxygen; it constitutes the bulk of the atmosphere, and amounts in volume to 79 parts of every 100. It is not respirable, cannot support flame, and is fatal to life; its presence being easily shown by placing a lighted taper under a bell-glass, the rim of which is immersed in water to preclude the access of air. As the taper burns, the water will rise in the glass, and when the flame is ex-

tinguished, (which it soon will be,) the fluid will leave its mark at a point that will prove *one-sixth* of the air to have been removed. The experiment is not accurate, though very near the truth.

Hydrogen is the basis of water; it exists throughout nature wherever that fluid, or moisture derived from it, exists. Separated from water, it is revealed as a gas, the *lightest* of all things that have appreciable weight. It unites with oxygen in the proportions by weight of 1 to 8, and by measure, of 2 hydrogen to 1 oxygen. If the smallest electrical spark be passed into the mixture thus proportionally blended, these aerial elements explode violently with a flash of light, and watery vapor is produced. So, if a stream of galvanism be passed through water, the two gases of that fluid are again developed in the above mentioned proportions.

The phenomena attending this electrization of water are perfectly astounding, nor can any adequate idea be formed of them, without referring to the “New Researches on Electricity,” by Professor FARADAY of the Royal Institution. “One grain of water,” he says, “will require an electric current to be continued for three minutes and three-quarters of time to effect its decomposition, in quantity sufficient to retain a platina wire $\frac{1}{144}$ of an inch in thickness, of any length, red hot, in contact with the air.” This quantity is equal to “800,000 charges of a Leyden battery, charged by thirty turns of a very large and powerful plate electric machine.” “The chemical action of a grain of water upon four grains of zinc, can evolve electricity equal to that of a powerful thunder storm.” These passages are sufficient to convey “an almost overwhelming idea of the extraordinary quantity or degree of electric power which naturally belongs to the particles of matter.

The electrical elements of vegetables and plants have thus been slightly glanced at, not with any view to introduce discussion, but to render it manifest that horticulture can never be duly understood or correctly applied, until its principles be determined. In common with agriculture, it must be scientifically investigated by professors duly qualified to analyse and instruct; and the world is deeply indebted to JUSTUS LIEBIG, for he has distinctly proved, that cultivators are wandering in the dark, though means are at command, were they duly applied, to remove difficulties and obviate perplexities, by the establishment of positive facts.

The practical gardener, if he duly appreciate the quotation and remarks, will see at a glance the reason of his embarrassments and failures; he will also be sensible of the wondrous mechanism he superintends; he will perceive that, from the four elements described, all the specific fluids of his plants, their chemical and medicinal principles, their sapid and odorous qualities are derived, and, therefore, if a plant do not meet with its proper aliment, or rather, if it be exposed to agents which disturb the natural assimilations, a morbid action must be induced and disease certainly follow. But again, plants must be duly supplied with *inorganic* substances, all such not being the products of vital organization, viz., earths, metals, potassa and soda. As these will be alluded to more particularly hereafter, it will now

be sufficient to observe, that they are derived chiefly from the soil, and therefore in the culture of the floral department, and of all plants in pots, the gardener is peculiarly liable to commit error, and incur vexatious contingencies.

Vegetable physiologists, seeing the impossibility of introducing any solid substances through the porous system of the roots, have been tempted to refer to *carbonic acid*, dissolved in or united with the sap, as the prime source of vegetable nutriment; and, following up this view, agriculturists have adopted the modern theoretic notions respecting humus and humic acid. We are mere infants in experiment, and what we *know*, may be comprised within a nutshell. But we have now arrived at a period of research and experiments, when we may assume a direction better calculated to lead to precise results. Heretofore we have seen them conducted upon detached parts of plants—mere mutilations. “Can the laws of life be investigated in an organized being, which is diseased or dying?” We think not. “Is not the observation of a wood or a meadow infinitely better adapted to decide so simple a question, *than all the trivial experiments under a glass globe?*”—LIEBIG.

The question is full of meaning, and can only be solved by diligent and careful research.

WM. W. VALK, M. D.

Flushing. L. I., July, 1847.

THE WHOLE SECRET OF GROWING QUINCES.

BY AN OLD ORCHARDIST.

SIR—I will comply with your request to write down for the benefit of your readers my practice in cultivating the *Quince* tree. The commendations you are pleased to bestow on my plantation of this fruit tree, leads

me to suppose that I may have struck out a mode better than is generally known or practised.

If so, “it ought,” as you say, “to be a secret no longer.” Indeed, I have had too

many valuable hints from the pages of your journal, not to be willing to add my mite, should it be in my power, to the general stock of information.

I will begin, then, by saying that the great difference, which you have yourself noticed, between the growth and yield of my quince trees, and that of cultivators commonly, is, not that I have discovered a new mode of raising this valuable fruit. It is rather *that I cultivate my trees well, and most persons do not cultivate them at all.*

This sounds like a broad statement. But it is true. I have a neighbor who rides horticulture like a real hobby. His garden and orchard are filled with the hundreds of new pears, and other prodigies of the nursery. I must do him the justice to say, that he grows these well. He told me last week that he had three hundred and forty sorts of pears in his collection! But, would you believe it? the only Quinces he has, are three trees, half starved, and thrust into an obscure quarter of his grounds, where they have neither been manured nor dug around, I dare say, for years! And thus he sends to me every year for some of my "handsome quinces," under the plea, that his soil does not suit them.

Believe me, the Quince tree is a great sufferer from the common delusion that it is a *bush* that wants a damp and shady place; that it will not grow in a dry soil; and that it does not need any manure.

My theory and practice are based on the very opposites of these three propositions. My plantations, as you saw, are on a high and dry soil, in an open sunny exposure, and in ground kept thoroughly enriched.

I have arrived at this plan of culture by easy stages. Indeed, I have, at the present time, some rows of Quinces, *indifferently planted* in the first place, in soil neither deepened nor duly manured beforehand. Of

course, they bear only about half the crop of my later plantation, that has been better treated from the beginning.

The course I have now settled upon, which I may say has been attended with perfect success, is as follows: Premising that the Quince will grow on any soil that will give good corn or potatoes, the first maxim is, that it should be well prepared before planting. This is done by the aid of that great earth regenerator, the subsoil plough. Two or three weeks, if possible, before the planting season, the land where the quince orchard is to be set, should be broken up by a team of horses and a good plough, set so as to turn a clean furrow. Following this team comes the subsoil plough, drawn by a powerful pair of oxen. This breaks up and stirs the soil twice the usual depth. Most persons spread a coat of manure before plowing. It is my practice to have it scattered along *in the bottom of each furrow*, from a light cart, which follows the subsoil plough. This places it at the bottom of my soil, which, *as it is a loamy one*, is the best place for it; because it enriches the poorest layer, and being always damp, it is, I conceive, always more soluble, and ready for the roots to take up, than when mixed with the top soil.

The soil, thoroughly plowed and prepared, planting may commence. I prefer the *spring*, but I have often been equally successful in the *autumn*. But in either case, by all means, "take time by the forelock." Not later than the first of November, or the tenth of April, for the latitude of New-York may, I think, be safely given as sound advice.

Dig your holes twice as large as the roots of the trees, and eighteen inches deep. Have, if possible, half a barrel full of good compost, (stable manure and bog earth well mixed for three months previously,) for

each tree. Shorten in the branches, (one-half of the last year's growth,) before you set the trees, and give the roots a good drenching with water before you cover them entirely with soil. Press the earth moderately about the roots, and leave the soil round the stem concave like a saucer, to catch the showers. In this way, if you lose one plant in a hundred, it will be an exception to my usual good luck.

In orchard plantation, I would recommend the Quince tree to be put out in rows: the trees to be ten feet apart, and the rows to be twelve feet apart. This will be near enough in good soil, deep, and prepared as I have just described. You will be able to gather a good crop of fruit from such a plantation three years after it is made; and if it is well treated, it will continue in a productive state for *thirty years*. Such quinces as I have grown in this way will always command two cents a piece in the New-York market, when those carelessly grown, are not worth half that sum; and I doubt if there is any much more certain and profitable orchard crop than the quince. I ought to observe that for many years open spaces in the ground occupied by the quince orchard, may be cropped with potatoes, sugar beets and the like, with profit and advantage to the trees themselves.

The annual treatment which I give my quince plantations, is, as nearly as possible, as follows: I prune my trees in the autumn, just after the fall of the leaf. This pruning consists in cutting out *as little as possible*, mainly old or decayed wood, or any branches that make the head too thick or unsightly.

In November, I fork in around the roots of each tree, five or six shovelfuls of fresh stable manure. This dissolves in part by the autumn rains, and fills the soil with soluble matter ready for the first absorption by the young fibres in spring.

When the spring opens, I have the ground ploughed between the rows, and lightly stirred beneath the trees. Directly after this, I give the whole a broadcast spread of salt, at the rate of ten bushels to the acre, or just a light coat sufficient to half conceal the ground under each tree. The cheapest and best salt for this purpose, is the refuse salt of the packing houses, to be had in all large cities where meat is packed for exportation.

I observe that one of your correspondents in Oneida county, has recommended salt for this tree in the last number of your journal. It is a good thing—I may say, the best thing for this fruit. I have used it now for five years, very plentifully, and can say with much confidence, that it is the *sine qua non* for the Quince tree. Deep green foliage, thrifty growth, and large fair fruit, have, with me, invariably followed its judicious application. The Quince and the Plum will bear more of it than any other fruit tree; and provided there is sufficient strength in the soil—that is, provided manure is also given—it may be used every year with decided advantage. I have found by experience, two things: first, that necessary as manure is to the Quince tree, yet common manure without salt will not give the very finest quinces; and second, that a poor soil will not bear heavy doses of salt without injury to vegetation.

Every tree has its insect. The only one worth notice, that infests the Quince, is a little rascal, a sort of *Scolytus*, I believe, that kills the ends of the branches. The egg is deposited about midsummer. The next spring, the little grub which succeeds it, eats through to the pith of the branch, and cuts away the sap-vessels just at the time—midsummer—when they are most wanted. Of course, the shoot above the insect withers and turns black. If this is

"let alone," it will spread over your whole plantation. If, on the contrary, you give a little attention to it—say a few minutes every day, from the first day in June, that the dying shoots begin to show themselves, cutting off the limb six inches below where it is blackened, and burning up the trimmings immediately, you will gradually get rid of the whole brood.

If there is anything in this rather prolix

account that is worth making public, it is at your service. I am, sir, your obedient servant.

New-York, July, 1847.

AN OLD ORCHARDIST.

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[Our correspondent's article is one of the most valuable that we have published, and speaks for itself. For the good results that follow the mode of cultivation which he has detailed, we can vouch most confidently.—ED.]

ON THE ENGLISH RURAL COTTAGE.

ALL the world has agreed, that there is nothing more perfect of its kind than the rural architecture of the English. The cottages of that country are as widely different in effect from those of any other, as the Anglo-saxon race differs from all else—civilized or barbarous.

What this difference consists in, there are, perhaps, few who take the trouble to analyze. Many persons suppose it to lie in pointed gables and high roofs. Still these were not originally English, but were borrowed from Flanders. Yet the Flemish cottages have little or none of the peculiar beauty which charms us in those of England.

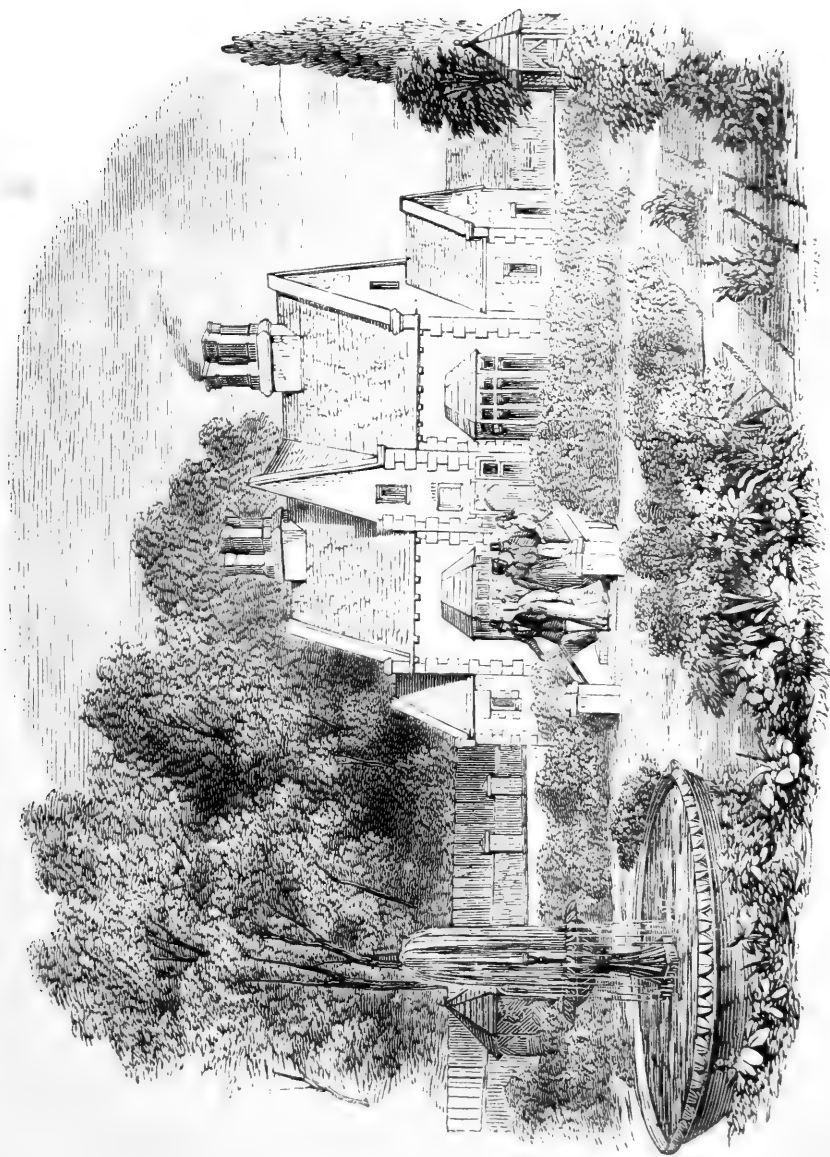
Others have imagined that it is something especially becoming in the features of the English landscape itself. Yet this can hardly be true, since we have seen faithful copies of the English cottage, built in equally picturesque scenery, in this country, without producing upon the mind the same impression as the original edifice.

The secret charm of the English cottage lies, we imagine, in its *home expression* and its *rurality*. These crowd the mind of the beholder at once with the most agreeable associations, and superadd to the idea of a habitation, and a tasteful piece of architecture, all the endearments and enjoyments

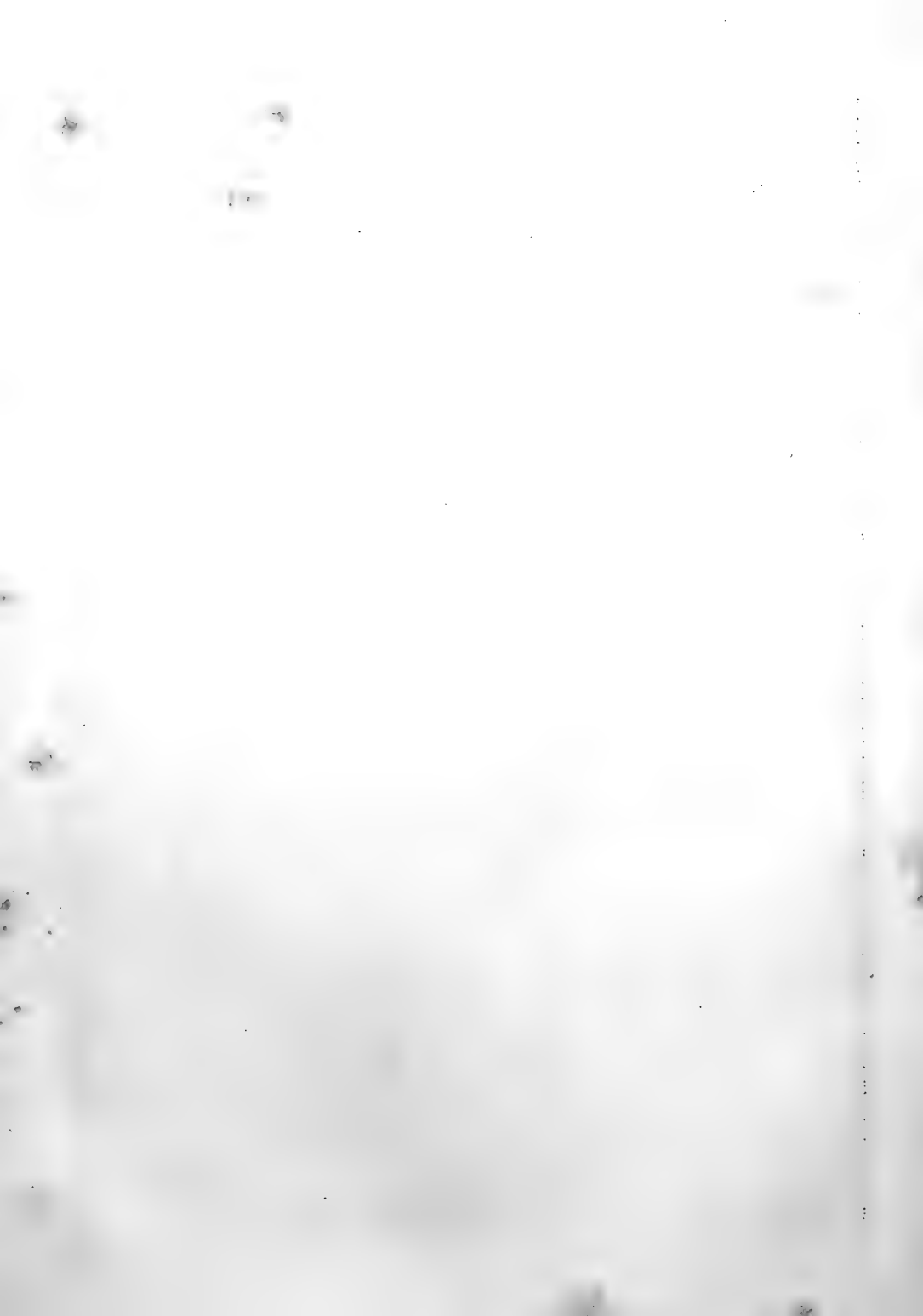
of home, and all delights of rural beauty and repose.

The English cottage, even of the humblest class, is surrounded by trees, embowered with vines and climbers, and hedged about with shrubs, to a degree quite unknown in any other country. The love of trees and flowers is an universal passion in that country, and man, woman and child, among the cottagers, take an especial interest in the green adornments of their home. Slips and roots find their way from the pleasure grounds of the nobleman's mansion to the humble garden of the cottage; and there is a personal and individual care bestowed upon them, even by those who have scarcely any other of the refinements of life, that neither the people of the continent, nor of this country have, as yet, any positive share of.

The effect of all this taste is to spread a beautiful drapery about the rural cottages of England, that renders what would otherwise be little more than rude cabins, little gems of rural and picturesque beauty. Indeed, strip most of the loveliest cottages of England of their sylvan and floral enrichments, and they would absolutely lose their whole power of charming. What, among the French, the nice sense of the becoming



ENGLISH RURAL COTTAGE.



and tasteful in dress, is to the human form divine, that among their garden-loving neighbors, the English, is the national feeling of the adaptation of rural decoration to country houses and cottages.

Our FRONTISPIECE gives a view of an English cottage, which may be taken in illustration of our remarks. It represents a new *Dairy Cottage*, in the grounds of Arundel Castle, a very short time after its completion, and before sufficient time had elapsed to enable those who are to care for it, to weave about it all the witchery of the "flower and the leaf." Nothing can well be simpler than its plain stone walls. It is true, they have a certain definite architectural form, but there is an almost total ab-

sence of the tracery, carvings and enrichments, which many, adopting the style in this country, consider so necessary to a beautiful effect. Look at this cottage, (the real one, we mean,) four or five years hence, and you would scarcely know it. Ivy and clambering roses, and bright blossoming creepers, will then have decorated it, and given it a finish more fascinating than the carving of the carpenter, or the chiselling of the stone-cutter. And, better than all, with the embellishment comes the feeling that it symbolizes the taste and the habits of the dwellers within the cottage, and that where there is so much rustic love of beauty and home pleasures, there must also be something of purity and happiness.

REMARKS ON THE MANAGEMENT OF PEAR TREES.

BY THOMAS RIVERS, SAWBRIDGEWORTH, ENGLAND.

[WE quote from the last number of the Gardener's Chronicle, the following interesting article on the management of the Pear. The author, Mr. RIVERS, is not only one of the most skilful and correct of all the English nurserymen, but is also a careful observer of facts in the art of culture.

Our readers will bear in mind the great difference in favor of American fruit-growers, as regards climate, for the standard culture of the pear. Our advantage, in brighter and warmer skies, makes it easy for us in many parts of the country, to grow most varieties to the highest perfection, when grafted on pear stocks, and raised in the common way, as *standards*. In all sites, where, from unfavorable soil or climate, it is at all difficult thus to raise fine pears on pear stocks, a remedy will usually be found in the employment of quince stocks.

We have had opportunities of learning very recently, that in situations on the sea-coast, as well as others very far south—bordering on the Gulf of Mexico, the pear on the quince stock always thrives decidedly better than on its own root.

This does not prevent us from thinking, that, for *orchard culture*, where the pear thrives as it does in the interior of this state, pear stocks are much to be preferred.

There are a few sorts, however, such as *Beurre Diel*, *Duchess of Angouleme*, etc., which are almost invariably so much higher flavored on quince stocks, that they should only be grown in the latter way. Mr. RIVERS' notes of the qualities of the different sorts, grown on the quince stock, are interesting, and we would be glad to collect from our correspondents in various parts of the Union, memoranda touching the same subject in this country: i. e. what varieties of

pear, of second rate quality on pear stocks, are found to be first rate on quince stocks? We have made notes on this subject ourselves, but need additional data from the experience of others.—ED.]

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I feel that it is a duty I owe to your correspondents and the gardening world generally, to notice the letter of a "Constant Reader," in No. 21. It will, perhaps, be the better mode to take his questions and remarks *serialim*: He says, "I have been for years much interested in the proper stock for fruit trees; my impression is, that the Pear cannot be produced in its highest state of perfection (whatever the mode of treatment or the stock used) on any other stock save the pear stock." To this I can answer most positively, that the very finest Pears I have ever seen or tasted, have been produced on pear trees grafted on the quince. I use no stocks but the pear and the quince; the former for orchard trees, or for those who prefer the pear stock; the latter solely for garden trees, principally to form prolific pyramidal trees, for which they are unrivalled both in beauty and fertility. I fear "Constant Reader" has also been constant to his home; has never seen or tasted the magnificent pears in some of the fruit gardens near Paris? has he never seen the pear trees in the Potagerie at Versailles? or tasted the fruit from them? (Mind, trees there are nearly all grafted on the quince.) If he has not done this, he has yet something to see and taste. I repeat, that I use only the pear and the quince as stocks, and I find the pear stock submit as kindly to root-pruning (or even more so,) as the quince. I can illustrate the good effects of root-pruning very forcibly in my specimen orchard, and at any time your correspondent may see and believe; however, I must tell my tale, and then proceed.

About thirty years ago, my father planted some rows of pear trees in a portion of the nursery, then a recent purchase; these were all common sorts of pears, standards, grafted as usual on the pear stock. They grew most luxuriantly for some eight or ten years, when their leaves began to change from their usually vivid green to a light

yellow; in a year or two, this yellow tint increased till their foliage was really of a bright straw colour; the trees, soon after, all died, so that at the end of fifteen years not a tree was left in this portion of the nursery, the subsoil of which, I must add, is hard white clay, full of chalk stones; this peculiar soil occupies a very small space, not more than a quarter of an acre, as the neighboring soil is a tender sandy loam.

When I came to years of thinking, the untimely fate of these pear trees was often present to my mind, for I remembered so vividly, with what pleasure I had filled my pockets from them; I, at that time, also found, that to be able to know any thing about pears, I must have a specimen tree of every kind that I cultivated. No other but this "pestilent spot" of earth happened to be just the place most eligible as a site for my specimen ground. What could I do? I did not then think of root-pruning, but I thought I should find some way or other to avert the untimely fate of my trees; I therefore planted them in the usual way, digging the holes about two feet in depth, and mixing some manure and compost with the earth taken from the holes, but leaving the hard clayey subsoil below, to the depth of two feet, untouched, I watched my trees narrowly after four or five years, as I then expected to see traces of the effects of the clay soil upon them. I think some eight years must have passed and gone before their foliage turned yellow. My first thought said remove them to a different site and soil; second thought, take them up, and give them some fresh compost; they will last a few years, and you can then find a good place for them; third thought, if you can renovate them for a few years, by taking them up and replanting, why not do this periodically, so as to keep your trees healthy; the site is good, make the soil equally so; fourth thought, what occasion is there to remove the tree? cut its principal roots, leave those that are fibrous; and so I became a pruner of roots. Now for effects, and "A Constant Reader" must recollect, that any day the Eastern Counties rail will carry him either to Harlow or Sawbridgeworth, each equally convenient, for a few shillings, to see with his own eyes all that I state.

In my specimen ground are several stand-

ard pear trees, from eight to ten years old ; these terminate long rows of standards, left to grow as nature dictates, both root and branch, except occasional thinnings of their heads. These, it must be recollected, are among my root-pruned specimen trees, a great number of which are from twelve to fifteen years old. They have had their roots pruned three times within these eight years, the last time in December, 1844. They are now full of health and foliage and fruit ; in fact, all that I can wish them to be. The standard trees, with roots unpruned, have their leaves yellow, and are, I fear, hastening to death.

I now proceed to give a list of such sorts of pears that, on my soil, are decidedly higher in flavor when grafted on the quince, and not (as your correspondent almost ludicrously says, "partaking of the flavor of the quince.") Pray, have you or Mr. Thompson ever ate a quince-flavored pear ? i. e. a pear having such a flavor from being grafted on the quince, (as I well know there are many pears with a very odd flavor.) Does the Ribstone Pippin taste of the Crab because it is grafted upon it ? Does the Peach acquire the flavor of the Mussel plum because it is budded upon it ? Does the Greengage ever taste sour and austere ? and yet it is almost invariably grafted upon the common Wild Plum, which is uneatable, from its peculiar astringent acidity. I do hope, for the credit of your paper, that your correspondent is not your "Constant Reader." To return to my list, I must first premise that every sort of pear is, as far as my experience at present goes, improved by being worked upon the quince ; but the following, in List I., are remarkable for growing freely on the quince, in most soils, without being double worked, bearing large fruit, of the highest flavor :

LIST I.

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|-----------------------------|----------------------------|
| 1. Beurre d'Amanlis * | 13. Crassanne. |
| 2. " Ananas. | 14. Doyenne gris. |
| 3. " d'Arenberg. | 15. Doyenne white. |
| 4. " de Capiaumont. | 16. Duchesse d'Angouleme. |
| 5. " Diel. | 17. Duchesse d'Orleans. |
| 6. " Easter. | 18. Forelle or Trout Pear. |
| 7. Bon Chretien, Williams'. | 19. Fortune (Parmentier). |
| 8. Chaumontelle. | 20. Franc Real. Summer. |
| 9. Citron des Carmes. | 21. Glout Moreau. |
| 10. Colmar. | 22. Gratiosi of Jersey. |
| 11. Colmar d'Arenberg. | 23. Jargonelle. |
| 12. Comte de Lamy. | 24. King Edward's. |

* D'Amanlis according to most French authors ; D'Amalis according to Horticultural Catalogue of Fruits.

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|-----------------------------|------------------------------|
| 25. Louise Bonne de Jersey. | 30. St. Denis. |
| 26. Napoleon. | 31. St. Germain. |
| 27. Passe Colmar. | 32. Van Mons' Leon le Clerc. |
| 28. Poire Chenille. | 33. Vicar of Winkfield. |
| 29. Princess Royal (Groom.) | 34. Wilhelmina. |

There are many other sorts that I feel almost assured, will do equally well on the quince stock as the above. I forbear to add them till I am fully convinced by proving them.

No. 3. Of this I ate my best specimens about the middle of last April ; they were vinous, juicy and delicious, from plants on the quince. Specimens from plants on the pear stock, kept only till the end of February.

No. 5. This pear seldom ripens well from trees on the pear stock ; on the quince, the fruit are larger, more handsome, of perfect flavor, and they invariably ripen well.

No. 6. On the pear stock here, (it must be borne in mind, that I am always referring to trees in the open quarters, not wall trees,) this is a most crab-like pear, bearing but very seldom, and never ripening : on the quince it bears well, is of high flavor, and always ripens in April and May ; it is, however, inclined to be gritty at the core, and this at present is the only pear I have found to be so from the quince stock.

No. 19. This is a perfect crab from trees on the pear stock ; from the quince it is very melting and juicy, and really a good small late pear. I ate my last and only specimen this day, May 26.

No. 21. Grows freely here on the pear stock, and blooms freely, yet seldom bears any clear fruit ; they are generally full of spots, and often do not ripen at all kindly. On the quince stock it bears clear handsome fruit, which invariably ripen, and are very highly flavored.

No. 23. On my finest soil here, a tender loam six feet in depth, subsoil sand, this sort always cankers, and very seldom produces any good fruit ; in short, it is a very shy bearer when on the pear stock ; on the quince it grows freely, and bears most abundantly ; fruit fine and clear, and of high flavor.

No. 25. This, of all the pears I know, is most benefitted by working on the quince. My specimen tree, on a pear stock, now twelve years old, has scarcely borne a dozen good clear fruit, and some standards of near.

ly twenty years' growth canker at the tips of their shoots, and their fruit is in most seasons, spotted and misshapen. On the quince how different! I have trees, from three to five years old, full of fruit, and these have hitherto every season been large, remarkably high coloured, beautiful and of the highest flavor. "Constant Reader" will, I think, see that I have some confidence in the Quince stock, when I state that I have a young plantation of this variety, on the quince, of 1500 trees, which I hope to make up in the autumn to 3000; these are to bear to supply the London market. At the expense of being thought a little egotistical, I must tell him that I am not only a pear-tree grower, but also a pear grower; Providence has kindly blessed me with fifty acres of good land, on which roses and pears, and I know not what, seem to be "very happy;" this is a favorite phrase with one of our best gardeners, who when he sees a tree in fine order, or one the contrary, designates them "happy and unhappy trees."

No. 27 bears here on the pear stock a tremendous quantity of fruit; these are often inclined to speck, and they seldom ripen well in the fruit room. On the quince stock the fruit are clear, always ripen well, and are of the highest flavor. I have, as above, given my remarks on a few well known and preferable sorts; they may be applied, with slight modifications, to all the varieties in List I.

LIST II.

Pears that require double working, before they will succeed on the quince; this is merely grafting or budding some free-growing sort of pear on the quince, and then regrafting the graft the following season with the "refractory sort," to use the expression of your friend "Dodman."

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|------------------------------|------------------------|
| 1. Bergamot. Autumn. | 12. Jean de Witte. |
| 2. Gansell's. | 13. Marie Louise. |
| 3. Beurre Bosc. | 14. Monarch, Knight's. |
| 4. Rance. | 15. Nelis, Winter. |
| 5. Broom Park. | 16. Ne plus Meuris. |
| 6. Brougham. | 17. Saint Marc. |
| 7. Crassane, Althorp. | 18. Seckel. |
| 8. Winter. | 19. Suffolk Thorn. |
| 9. Dunmore. | 20. Thompson's. |
| 10. Hacon's Incomparable. | 21. Urbaniste. |
| 11. Inconnue, Van Mons, 175. | |

No. 3 is exceedingly "refractory," and I am not quite sure that it will live and

flourish for any lengthened period, although double worked on very thrifty stocks. In some soils this fine pear does not ripen well on standards; it is therefore very desirable to get it to do well on the quince, as it will, I have no doubt, bear when the tree is young; at present it is, while young, a shy bearer.

No. 4. My standards of this sort on the pear stock, too often bear misshapen fruit, inclined to speck and crack, and in some seasons, not ripening well on the quince. Its fruit is clear, fine, and remarkably high flavored.

No. 11. I notice this Pear, as I remarked a short time since one of your correspondents inquired of you its origin, which you could not give. I received it with several other sorts, from M. Van Mons, about eighteen years ago. I understood him at the time, that they were seedlings not then named; this is a very hardy and excellent late pear, about the size of Beurre d'Arenberg, but larger, first-rate in quality as a melting pear, and fit for the table from February to April. The sorts then received were placed in the nursery catalogue, as "Inconnue, Van Mons," and numbered. They all still stand under the same name, with different numbers attached.

The sorts I use to form a stock on the Quince for regrafting, are Beurre d'Amanlis, Jargonelle d'Automne, Fondante de Brest. These all form the most luxuriant stocks. Grafting on the quince often fails. I have known eighteen out of twenty to succeed in some seasons, and the same number to fail in others. It is an uncertain mode; budding is preferable. For double working you may always graft, that is, if you prefer it, or if your buds fail. Grafts succeed perfectly on the shoot of the pear produced from the quince stock the preceding season. I earth up my trees to encourage them to root close up to the junction of the graft with the stock, but not with the view of making the graft root. I wish to avoid this, as the effect of the quince stock is then lost. If you wish for cultivated pears on their own roots, there is much time and labor lost by this mode; for any variety of pear may be layered, and good plants obtained in about two seasons. And now for

the last paragraph of your "constant" friend. Can we always find "soil and locality in every respect suitable" to the growth of foreign varieties of pears? Is not our method of placing them against walls and espalier rails, etc., "unnatural?" The peach tree, which, in the United States, in a natural state, bears such enormous crops, bears here at least equally fine fruit, but in most "unnatural" places. My root-pruned pear trees, many of them, I have purposely made to contend against nature; in a soil that is naturally death to them, I make them flourish. To use the oft-quoted sentence, "A man that can make a blade of grass to grow," etc., is a benefactor to his race, and if I can, by precept and example, enable the numerous occupiers of small gardens to grow pears and apples for their dessert nine months in the year, and plums and cherries during the summer, shall I not also be a benefactor in an humble way? I hope so.

Allow me to advise your correspondent to visit the horticultural gardens at Chiswick; he may there see pear trees of some twen-

ty-five years' growth on the quince stock, with roots protruding from the stock close to its junction with the graft. Pictures of health and fertility, they have borne many bushels of fruit, and yet I have never heard the Fellows of the Horticultural Society complain that they tasted like quinces. Some fine trees of about the same age on the quince, are also in the border. These were all removed about two years since, and of course their roots were pruned; on them may therefore be seen the effects of root-pruning.

I will conclude with the words of "Dodman:" "a very little care and judicious selection of sorts would insure them (pears) daily, from the end of July till May. I may add, that any garden ten yards square, or even less, will, with the quince stock for pears, the Paradise stock for apples, the *Cerasus Mahaleb* as a stock for cherries, judicious root pruning and surface culture, supply a very ample dessert of delicious fruits.

THOMAS RIVERS.

Savoybridgeworth, Herts., June 5, 1847.

COE'S TRANSPARENT CHERRY.

HAVING heard, for the last two years, very high eulogiums passed upon this new seedling cherry, raised in the interior of Connecticut, we procured, through the kindness of a friend and neighbor, who made a special visit to the original tree in June, when the fruit was in perfection, specimens in a perfect state of maturity.

We are, therefore, able to give an accurate outline and description of this new variety, and to assure our readers, at the same time, that it is undoubtedly, with the exception of Downer's Late, the finest American Cherry that we have yet tasted.

Its merits appear to be, first, earliness—the season of its maturity being just before that of the Black Tartarian; second, unusual beauty of appearance and delicacy of

flavor; third, great hardiness and productiveness.

The growth of the tree, and the flavor of the fruit, place it in the class of *Heart* cherries; but the fruit is, in appearance, something between *Belle de Choisy* and *Downer's Late*—rather larger than either, and with much of the beautiful semi-transparent appearance of the former. It is more thrifty and productive than the *Belle de Choisy*, and we learn from those who have observed the original tree in bearing for several years, that its fruit continues ripening gradually for a rather longer period than is usual with other varieties. The tree is of thrifty upright growth, and forms a head much like that of *Downer's Late*.

The name was given it by Mr. CURTIS

COE, of Middletown, Connecticut, who planted the seed from which it sprung, and in whose garden the original tree stands. As Mr. COE never parted with any trees or grafts of this variety until last year, he is still chiefly its possessor; but as he has now a large quantity of thrifty young trees in his grounds, we presume it will soon get into the hands of nurserymen generally, and be offered at a moderate price. It is undoubtedly a most valuable acquisition, and will, we think, take its place among the ten finest cherries known.

Fruit, of medium size, remarkably round and regular in form, considerably resembling that of a duke cherry. Skin thin, wax-like, of a very delicate, pale amber, nearly covered with pale cornelian red in the sun, and marked with delicate pale spots or blotches, which give it an unique appearance. Stalk rather short, set in a

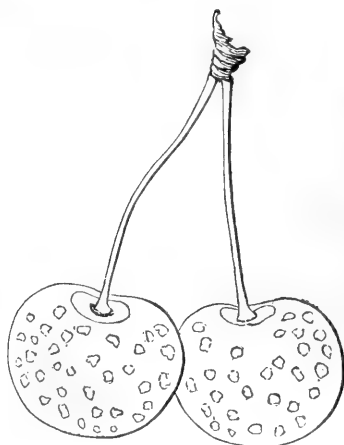


Fig. 11. *Coe's Transparent Cherry.*

depression of moderate depth. Flesh very tender, melting and juicy, with a delicate but sweet and excellent flavor. Ripens early in June, between Early White Heart and Black Tartarian.

HALF A DOZEN RARE HERBACEOUS PLANTS.

BY AN AMATEUR, NEW-YORK.

MR. DOWNING—I see but little space in the *Horticulturist* devoted to hardy popular border flowers—perennials that require less care than any other flowering plants, and that are not inferior to any in beauty and real value in the parterre.

I send you notes of six sorts cultivated among many others in my collection, which though not all new, are yet quite rare in most gardens, and deserve to be much more widely known than they are at present.

I. GLANDULAR COLUMBINE.

Aquilegia glandulosa.

This unique and beautiful new Columbine stood out all last winter without protection, and bloomed finely this season. Its flowers are large, parti-colored blue and white, and at a distance, do not look much

unlike those of the old blue and white Passion Flower. It is a decided acquisition, and will no doubt prove a very hardy and permanent border flower.

II. VAN HOUTTE'S PHLOX.

Phlox Van Houttii.

This variety, quite recently sent out by M. VAN HOUTTE, the celebrated nurseryman at Ghent, is a very striking and beautiful species, and eclipses every thing else in this favorite old genus. Its flowers are white, distinctly and boldly striped with bright purple, forming one of the prettiest examples of floral variegation that I know. The plant grows with ease in any good flower border, and produces large and fine panicles of blossoms in June and July. Planted in beds, and the shoots pegged



Fig. 12. Van Houtte's Phlox.

down, it has a lively and beautiful effect, and continues flowering for two or three months.

III. SIEBOLDT'S SEDUM.

(*Sedum Sieboldtii.*)

One of the many pretty plants brought by Dr. VON SIEBOLDT, from Japan. It is quite dwarfish in habit, forming a neat little bush-like plant, with stems all radiating from one centre, and thick pale silvery gray leaves; perfectly hardy, and will grow from any little bit stuck into the soil. Its bright pink clusters of flowers appear in

October, at the end of every shoot, and last till the frosts of November destroy everything besides it. It gives quite a cheerful appearance to the garden, when nearly all else is frosted and dreary.

IV. CORONET LYCHNIS.

(*Lychnis Coronata.*)

Although this species was brought from China, by TOURNEFORT, seventy years ago, still it is very seldom seen in our gardens. Certainly it is the most beautiful of all *Lychnises*. Its large blossoms are of the finest pure orange color, and I have some in bloom in my garden, while I write, that are of the size of a half-dollar. I believe there is a notion prevalent still, that it is a greenhouse plant, as I see it occasionally feebly grown in pots. I find it perfectly hardy, with the trifling care of turning an empty flower pot over the roots in November to keep out excess of wet in winter. In deep soil, and a rather *shady* border, it will grow near two feet high, and bloom most of the summer.

V. LARGE PODDED EVENING PRIMROSE.

(*Oenothera macrocarpa.*)

This is, to my taste, the finest of all the *Oenotheras*. The flowers are very large, and are produced for a long time in succession. Besides this, the plant has a good habit; the stems being prostrate, it forms an excellent bed or mass, and is quite ornamental. Though an American plant, it is very seldom to be found in our collections, while the inferior species are seen in every garden.

LONG-FLOWERED LILY.

(*Lilium longiflorum.**)

Remarkable for the size and beauty of its pure white flowers, which are twice as long as those of the common white Lily, though the plant only grows from one to two feet high. It should be replanted every two or three years, as it forms its new bulbs upon

* *L. Japonicum*, of some.

the top of the old one, so that a root originally planted four inches deep, gradually approaches the surface till it is almost bare. Owing to this, it is often destroyed by the winter. To make sure against this, the better way is to protect it by throwing a couple of shovelfuls of soil over the root in the autumn, and removing in the spring.

I obtained all the foregoing species from Mr. HOGG, of New-York, who pays especial attention to the culture of this class of plants.*

Yours, respectfully,

AN AMATEUR.

New-York, July 9, 1847.

* [Mr. Hogg's collection of *herbaceous plants* is one of the largest and best in the country.—ED.]

PHYSIOLOGICAL EFFECTS OF SEVERE FROST ON TREES.

TRANSLATED FOR THIS JOURNAL, BY DR. A. GERALD HULL, NEWBURGH, N. Y.

SINCE the establishment of the Royal Society of Horticulture, at Paris, there have been received and published many facts exhibiting the disastrous effects of intense cold on vegetation; but these have not been explained by the Society, or, rather, have been attributed, according to the generally received opinion, to an unusual dilatation of the tissues dependent on the congelation of the liquids contained in these same tissues, on the principle that a piece of ice occupies a greater space than the liquid which forms it. This view of the subject compels us to admit that there are some tissues much more dilatable than others; otherwise we could not explain why the common *House-Leek*, a very watery plant that grows on our thatched cottages, resists the most vigorous winters, while other plants, of a less succulent tissue, perish. We believe, and with much reason, that the physical constitution of every vegetable is such that it can sustain a given amount of cold, but that there is no mode of discovering, *a priori*, this property in the tissue. Experience alone can teach us.

M. CHARLES MORREN, Professor of Botany in the University of Liege, having made observations on the effects of the winter of 1837-8, and relying on the one base, that

sap is not pure water, and on the other, that water, which is not pure, does not freeze as readily as that which is pure, has reached conclusions which are calculated to modify the manner of estimating the cause of destruction to plants during severe winters.

M. MORREN, having presented his conclusions, under the form of ten aphorisms, I transcribe them here, as they were published in the *Echo du Monde Savant*, on the 27th of March, 1839.

1. No organ of plants is rent by the action of cold, except in a few rare cases, where the cavities of the cellular tissue yield to the effect of the dilatation of the liquid.

2. The organs contained in the cells or vessels,* do not undergo any change; the fecula, perhaps, excepted under some circumstances, when changed into sugar, doubtless through the agency of an acid, derived from the decomposition of the organic parts.

3. The intercellular passages (les biforines,) do not cease, after freezing, to eject their *raphides*, (minute crystals found in certain living plants—*Trans.*) and thus it is probable that this movement is not due to a vital contractility.

* Come l'endochrome, le nucleus, le fibre, la fecula, les raphides, et les cristaux.

4. The action of freezing affects each individual organ in such a manner that there are as many separate pieces of ice as there are aquiferous organs. Every one of these organs thence undergoes a dilatation which, in the mean time, never proceeds to the extent of fracture.

5. This dilatation depends, in a great measure, on the separation of air contained in the water. Thus, frozen water, which burst an iron cannon of a finger's thickness, according to the experience of Biot, and shattered the copper globe of the philosophers of Florence, by a force of 27,720 pounds, produces no fracture of a vegetable cell, formed by a membrane of immeasurable delicacy.

6. The system of Dr. HAVY, which maintains that water, in a state of congelation, kills plants, because it compresses their collars and attacks their roots, ought to be rejected; also his hypothesis that, during freezing, the fibres are contracted, and the organs rent by the dilatation of the sap.

7. It is to be inferred, since the sap, proper juice, fluid of the cells, and, finally, all the menstrua which are found in the organs of plants, are not formed of pure and liquid water, that vegetables, on that account, resist congelation within certain limits, as the experiments of BLAGDEN have demonstrated that the materials which affect the purity of the water, allow the liquid to attain uncongealed, a degree of cold otherwise sufficient to freeze it.

8. The extrication of air from water during the process of freezing, exerts the most hurtful influence on the life of plants; it introduces air into organs which are not designed to elaborate it; and this separation of air is the first advance toward the decomposition of the sap and the materials it precipitates, so that during a thaw a chemical action begins by killing the plant.

9. The distention, thus developed by the contents of the cells and aquiferous organs, eliminates the air on thawing, and, because the air is not controlled by the liquid, throws a large quantity of the latter into the air cavities and vessels; so that the apparatus designed to contain liquids, contains water and air, while that naturally intended as a vehicle for air conveys water. The physiological relations are changed, and the organization cannot sustain such mutations with impunity.

10. Thus, if frozen plants be not deprived of life, by the decomposition of their juices, the loss of excitability or chemical disturbance of all their parts, they are destroyed by the perversion alone of their functions.

[We publish the foregoing as an interesting contribution to this obscure part of vegetable physiology, to which the French and Germans have paid more attention than the English. In this country, where certain disastrous forms of winter-blight are prevalent among fruit trees, the whole nature and effects of congelation become highly interesting.

There appear to us, however, to be objections to some of M. MORREN's aphorisms, which we are able, at the present moment, only to indicate, with the hope of returning to the subject more fully hereafter.

In the first place, the usual opinion that the injurious effects of freezing on trees is a *mechanical* one, bursting the sap-vessels, etc., owes its weight to every-day observations. Every one familiar with country life in the Northern States, knows, for instance, that severe cold has the effect occasionally of rending the entire trunks of large trees with a loud noise like the report of a cannon. It scarcely seems possible that this could take place without also "rending the organs" of the trees.

In the second place, if the sole injury to plants, of severe freezing, were that of extricating the air, which indeed always takes place in the act of freezing, all plants exposed to a greater degree of frost than their structure naturally enables them to bear, would as inevitably die as the freezing took place. But this, it is well known, is not the fact. On the contrary, a given plant, that will not bear, under ordinary circumstances, to be exposed to a temperature even a few degrees below the freezing point, may be subjected to a temperature within a few degrees of zero, provided it is frozen gradually, and kept in the dark, and very gradually thawed. Does not this go to prove that it is rather to the mechanical disturbance, distention, fracture, etc., caused in the sap vessels by *sudden freezing and thawing*, than by any chemical change brought about by the expulsion of the air from the juices of the plant in freezing, that we must attribute fatal effects—since this separation of air must necessarily occur

whenever freezing takes place, whether ice crystals are formed slowly or rapidly?

That half-hardy plants, however, that appear partially injured at first, do often die from the chemical change effected in their juices by frost, can scarcely be denied. But this does not appear to us to be the only way, or indeed the usual one, by which the death of trees is caused by frost.

M. MORREN'S aphorism that the less watery, or,* in other words, the more elaborated is the sap of plants, the less liable are they to be injured by freezing, is one that is not only well established, but most interesting practically to cultivators: since it teaches them to prevent, in half-hardy trees, (either by planting them on high and dry soil, or otherwise checking over-luxuriance by root-pruning,) all growth late in the season. Early growth, well elaborated juices, and thoroughly ripened wood, are the best safeguards yet known, against the injurious effects of freezing, on particularly tender trees.—ED.]

HOW TO MANAGE THE MANURE HEAP.

BY PROFESSOR LINDLEY, OF THE UNIVERSITY OF LONDON.

No one, who has been watching the progress of agriculture for the last few years, can for a moment dispute the importance of the foreign substances, which, like nitrate of soda and guano, have been introduced into husbandry. But admitting to the fullest extent, the value of these materials; admitting, too, the utility of some of the artificial manures compounded for sale; we must observe, that it is most absurd for the cultivator to put himself to the expense of purchasing them until he has utterly exhausted all the means which his farm affords him, for nothing, of increasing the fertility

of his land. Such substances should be employed *in aid* of ordinary manure, not *instead* of it. The art of farming and market-gardening consists, or should consist, in obtaining the greatest possible amount of food at the smallest possible expense.

Now, it must be obvious, that those manuring substances which are necessarily produced on a farm, are the least expensive of all things; to the careful collection and preparation of them should the good husbandman turn his attention in the first instance; and when all the resources of skill are exhausted upon that preparation, it is

time to look abroad for assistance. Farm yard manure is, therefore, the first object of improvement; and it is to this great end that our remarks upon manures have of late been directed. The man who wastes his farm-yard manure and buys other things, can only be compared to him who should leave his wheat upon the ground, and buys rice or maize to make good his prodigality. We assert, without fear of contradiction, that the farmer does, in the great majority of cases, commit a folly equivalent to this; not indeed, intentionally, but from not knowing better.

It is not, however, merely because of its cheapness, that farm-yard manure is the best of all substances for enriching land, but because it contains such a great variety of substances, among which each crop finds that which it most requires, and in the fittest state for becoming its food. "Fortunately," says Dr. DAUBENY, in one of his excellent agricultural discourses, "we are provided, in the dung of animals, with a species of manure of which the land can never be said to tire, for this simple reason, that it contains within itself not *one* alone, but *all* the ingredients which plants require for their nutrition; and what is perhaps of equal importance, existing too, in that precise condition in which they are most readily taken in and assimilated." No wonder then, that the Royal Agricultural Society of England should have made the subject of farm-yard manure the subject of one of their prizes, and that we should in the meantime be turning our feeble efforts in the same direction.

It must be evident, to those who have considered the subject, that the great points to attend to are, firstly, to reduce the animal and vegetable matter of manure to a decayed state; and secondly, to *keep every-*

thing that results from this decay, whether fluid or solid, or invisible, after it has been obtained. It is of no use to catch the hare, if you do not hold her. The farmer lets his stock trample straw and manure together in the yard, and by degrees it becomes partially rotten; it is then thrown into heaps, and allowed to ferment; and then it is used. The market gardener carts the long stable-litter from town, throws it into a heap, lets it ferment, and then applies it to his land. In both these cases, rain and other fluids wash away one part, which runs to waste; the fermentation drives off another, which disappears in the air; and what is left is, at the most, about half as good as it should be. This cannot be the way to manage manure.

What *should* be done, is something like this: every husbandman should have a place for preparing manure. It should be a trench or ditch, large in proportion to the quantity of manure to be prepared. The bottom and sides should be made firm with clay or any other material that will prevent a waste of the water used in preparing the manure. This trench should fall towards one end; and at that end a hole should be made, (which we will call A,) and well puddled or lined with clay, so as to hold water, into which all the liquid matter that runs from the manure should drain. By the side of the trench should be a pump and well, which might be so contrived as to throw water in a stream all over the manure, when necessary. All things being ready, a quantity of raw manure, consisting as usual, of straw and all sorts of impurities, should be placed in a layer at the bottom of the trench, well watered, and trampled down; by this means it will be enabled to decay faster than if it was dry, for the mass will begin to heat; what wa-

ter the straw cannot suck up, will run into the hole A, out of which it should afterwards be drawn, and poured again over the heap. At the same time that the layer of raw manure is placed on the floor of the trench, there should be scattered among it a quantity of gypsum (plaster of Paris,) if that can be had cheap, or else some powdered green vitriol; then the fluid which drains away will consist of those ingredients or their elements, water, etc. The object of adding such substances, is to prevent the loss of ammonia, an invaluable substance, which flies away from manure, if you let it alone, but which either the gypsum or the green vitriol holds fast, and keeps with themselves in the manure. Gypsum (plaster of Paris) is, in many places, the cheapest material; but the wholesale price of green vitriol is not more than five shillings per one hundred weight in the London market; and probably the material called *salt-cake*, and now worth about three shillings and six-pence per one hundred weight, would answer the same purpose.

When there is a fresh supply of raw manure ready, it should be placed in a layer over the first, mixed with gypsum or green vitriol, or some other "fixer," and well trampled down; then let it be thoroughly watered with the fluid in the hole A, if there is enough there; or with water from the pump, if what has drained into A is not sufficient. Water or drainings should be constantly added to these heaps, for it is of the first importance that the manure should be kept continually moist, in order to hasten its decay. In this manner the manure heap may be increased from time to time, as raw manure accumulates, until it is too high to be conveniently raised farther, or to allow of water or drainings being easily poured over it. By degrees the whole

mass will become a soft pasty substance; and when in that condition, will be fit to put upon the land, or to lie by till wanted. In the latter case, however, care must be taken not to allow any of its "goodness" to be wasted out of it again; and reservoirs should be formed at the edge of it, to receive what does run from it, which should be poured over it again, or carried and used elsewhere.

If this plan were merely speculative, we should have nevertheless thought it worth proposing; but it is, in fact, the result of experience. It is essentially the same as that practiced by Mr. SCHATTENMANN, and seems to us the best method of managing the dung-hill that has been yet proposed. It has the great merit of saving everything, of wasting nothing, and of causing no other additional expense than that of the purchase of the gypsum, (which would probably be bought without being thus applied,) or of a boy occasionally to attend to the watering the dung-hills. Although we entertain no sort of doubt of the extreme importance of attending to these suggestions, and of the *ample return* they will make for any expense connected with them, we shall be quite satisfied if any of our readers will try them first in a small way, and then ascertain for themselves the relative effect per load of common farm-yard manure, and manure prepared in this more careful manner.

[We will only add to the foregoing most practical and useful suggestions, that, in our climate, with its great extremes of heat and moisture, it is still better if there is a covering—a rough open shed, or the like, over the manure heap.

Where there is abundance of peat or dry black bog earth at hand, it may be used instead of gypsum, etc., as a "fixer" for

the ammonia. Instead of a sprinkling, it may be applied with the manure in layers of equal, or even double thickness. Saturated with the liquid and the volatile portions of the manure, and its vegetable matter decomposed by the fermentation of the mass, it becomes at least equal in value to the farm-yard manure itself, as commonly used; and thus affords, to many persons, the means of doubling or trebling the bulk and value of their manure heap at trifling cost. —ED.]

MY EXPERIENCES WITH GUANO.

BY A RETIRED CITIZEN, BALTIMORE.

DEAR SIR: Do not suppose that I am about to come forward with another certificate of the unparalleled virtues of the "great fertilizer." I am not in the employ of any of the speculators in the article. I have no desire to tell a large story, and appear before the world as having made the richest soil in the world out of a dry sand hill by top-dressings of the excrement of sea birds. No, indeed. I am a disappointed man; I have tried to make my garden rich, and I have made myself poor indeed, in vegetables!

I know very well what you will say: "You did not understand the matter. You put it on at the wrong time. You used too much. You should have been more cautious." This is all very fine, and may be very true. But pray, how was I to know just how much to apply to every sort of crop? The farming newspapers, the circulars of the dealers, all spoke of it as containing the very elements of life, nutrition itself, for plants of every possible growth. "Ammonia and the phosphates" (I have got as deep as that into the chemicals) "are the food of plants;" and guano, I learned, is rich in ammonia and the phosphates.

You must know, then, that this is the very first season of my dabbling in the soil.

The by-gone part of my life has been chiefly spent among brick walls and flagstones. If the result of my experiences for the first five months, (I began this spring,) should lead you to think that I am rather *green*—so-so verdant—I beg to assure you that my garden is *not* so. There are melancholly gaps in all my beds. My transplanted trees have most of them assumed the appearance of what my neighbor, a botanist who dries plants, keeps in his "*hortus siccus*." And—but I will transcribe from my diary.

April 2d, planted four beds of beets, (a.) Had the ground covered with a tolerable sprinkling of guano. This was well dug under, and sowed with "Early Turnep, Blood Beet" and "Early Scarcity." Planted, also, a long bed (b) of White Onions. "Onions like a very rich soil." Have given this patch accordingly another light coat of guano over the surface, while raking the bed; and then planted in drills.

[*Mem.*—Only about one-fourth of the beets in the beds (a) came up, and these very slowly. Afterwards, my man "John" planted some of the same seed in another part of the garden, of which, I firmly believe, every one grew. Onions in (b) still worse, not one in fifty seeds grew, and these gradually died out as if burnt. Have sowed

this same bed over three times, the last time all went well. Suppose the guano has spent its virtues a little in the soil.]

April 10th. Soaked some peas twelve hours in guano water, in order to try how much start it would give them; planted them in rows, and put in at the same time every other row without soaking.

[*Mem.*—Very few of the “soaked,” vegetated. About one in four or five grew finally; of those let alone, all grew and bore well.]

April 12th. Transplanted some tomatoes and egg plants to-day. Not meaning to over-do the thing this time, I gave the lightest possible sprinkling of the “pulverized Peruvian” to the hills, where I put them out, and turned it in well with the trowel before transplanting them.

[These struggled hard; but two-thirds of them finally gave up the ghost. On asking my neighbor Smith since, if tomatoes are not hard to transplant, he smiled and said, “it is as easy for them to grow as it is for a Yankee to whittle.” It must have been that admirable fertilizer, thought I, though I said nothing to my neighbor Smith.]

April 15th. Planted Lima beans. Here I think is something that will certainly stand fire. Here is a seed that will be able to take up “ammonia and the phosphates,” and turn them into “greens” without delay. Accordingly, I have planted one-half my hills of Limas with a tolerable dusting of the fertilizer right under the seeds—intending that as soon as they began to “send out circulars,” they shall feel the stimulus that I have given them.

[*Mem.*—Sorry to be obliged to say that only a few, a very few, of these beans have sprouted. To be sure, such as have sprouted, look green and thrifty. What can be

the matter of the rest, I don't well see, unless they had an over-dose. On digging up those that wouldn't come up, I found them quite rotten. The other half that I planted with common manure in the hills, came up in a few days, every bean of them, and have done finely.]

April 19th. Made a rosery, and being a little nervous about “ammonia,” used some old barn-yard manure. Thought, however, that I would not give up without a fair trial, and put out a half dozen roots of the “Four seasons” Rose, with a couple of handfuls of guano mingled with the soil. [The weather set in pretty dry for a fortnight after, and these half a dozen of plants, though they are still green, have not started a leaf yet! The others have grown pretty well, and many of them have given me some handsome well-blown roses.]

I will not trouble you with farther extracts, as on turning over the leaves, I find during the months of April and May, pretty much the same running account. I don't know, indeed, as I have in “all my trials” succeeded with a single experiment, except with my grass-plot. This I gave a good top-dressing very early in April, and it has been extraordinarily green and luxuriant ever since. Indeed, as it was not scattered over it very evenly at first, it made spots and streaks of green so markedly visible, that I was obliged to go over the neglected parts again, to make the whole one uniform pattern.

I have pretty much struck a balance with guano in my own mind. It may all be very well for those who know how to use it, but I am decidedly of opinion that it is dangerous for beginners like me to meddle with. It has put back some of my “truck,” and quite destroyed others, and I find on

looking into my neighbors' gardens, who have not had a pound of it, that their crops are all sound and regular, and their advice to me is to stick to the old-fashioned manure.

What I think ought to be done in a journal so much read and referred to, as I suppose yours is, is to say a few words to let those who are ignorant, and have had no practice like myself, know something about guano *besides* its "wonderful virtues." Let them know, for instance, that it is *absolute poison to seeds*, if sown along with them, and to roots of everything *transplanted* that it comes in contact with. My own opinion is, that unless "homeopathic doses" of it are administered to most plants, that it burns them up in a dry time like a conflagration. There has been enough said in its favor. Let the "sufferer by fire," now be heard. I am, dear sir, yours, with respect,

J. S.

Baltimore, July 12, 1847.

P. S. My darkey "John," says he "berry glad massa got sick of de *potteccary manure*; worse dan ole Scotch snuff."

REMARKS.—Our correspondent's experience is indeed melancholy, but not more so than that of many others, both farmers and gardeners, whose experiments we saw

the first season after the introduction of guano. It was then applied "liberally," in proportion to what the cultivator felt that he could afford to put upon his land, or what he hoped to get from it. The consequence was that we saw whole fields of potatoes and onions half destroyed by it.

The truth is, guano can never be applied safely alone, or in a pure state. It should be mixed with a much larger bulk of earth than is generally supposed necessary, to render it safe to apply it directly to any plants, and we think almost its whole value in this climate is lost, if the season is not a *moist* one.

There is no form in which guano is applied with results so uniformly good, as in a *liquid* form. One pound to ten gallons of water is a sufficient quantity, and the effects of a frequently repeated watering with this, are surprisingly beneficial, as our correspondent has with his mode of operation, found them to be injurious. Hence, those whose use of guano has been confined chiefly to green-house plants, or a few choice trees and shrubs, which they have regularly watered with it, are as loud in its praise, as those who have used it mainly in field crops, and perhaps with the disadvantage of dry seasons, are lukewarm. —Ed.

THE HYDRAULIC RAM.

WE have lately had our attention drawn to that most valuable self-acting water machine, called the *Hydraulic Ram*; and as it is comparatively little known in the United States, we think some account of it cannot but interest many of our readers.

The three conditions most essential to the growth of vegetation, as every one knows, are light, heat and water. There

is no scarcity, in most parts of the United States, of warmth and sunshine, during the growing season. But there is often very serious difficulty in producing many garden crops, and maintaining ornamental grounds in the highest condition, from the dryness of our climate in midsummer. Any means, therefore, of avoiding the mischievous effects of summer drouth will,

we think, be hailed as a real blessing to the Horticulturist. Such a desideratum, for many localities, is the Hydraulic Ram. Wherever a small constant stream of water, or even a spring with a very moderate regular overflow, can be found, within any moderate distance of the grounds to be irrigated, a plentiful supply of water may be furnished without any farther cost or expenditure of power than what is involved in the purchase and erection of the machine itself. A stream or spring in a deep valley, or a brook at two or three hundred feet distant, may thus be made to force itself up-hill to any desired point, where a pond, cistern or reservoir may be found most convenient.

From such reservoir the water may be led to any lower part of the grounds—a complete irrigation maintained wherever it is needful. Thus, lawns may be kept as fresh as emerald, and beds of vegetables and flowering plants grown with a luxuriance and perfection rarely seen in our climate.

Where the source affords an abundant supply of water, fountains may be kept playing by the same means, and it is surprising how much beauty and value may be conferred on pleasure grounds by the addition of as much water as will be supplied by a good Hydraulic Ram fed by a small but unfailing rivulet of water.

The construction of the Hydraulic Ram is at once simple and ingenious. We extract the following highly interesting detailed account of the invention, from *Ewbank's Hydraulics* :

Every person accustomed to draw water from pipes that are supplied from very elevated sources, must have observed, when the cocks or discharging orifices are suddenly closed, a jar or tremor communicated to the pipes, and a snapping sound like that from smart blows of a hammer. These

effects are produced by blows which the ends of the pipes receive from the water; the liquid particles in contact with the plug of a cock, when it is turned to stop the discharge, being forcibly driven up against it by those constituting the moving mass behind. The philosophical instrument named a *water hammer* illustrates this fact. The effect is much the same as if a solid rod moved with the same velocity as the water through the tube until its progress was stopped in the same manner, except that its momentum would be concentrated on that point of the pipe against which it struck, whereas with the liquid rod the momentum would be communicated equally to, and might be transmitted from *any* part of, the lower end of the tube; hence it often occurs that the ends of such pipes, when made of lead, are swelled greatly beyond their original dimensions. We have seen some 3-4 of an inch bore, become enlarged to 1 1-4 inches before they were ruptured. At a hospital in Bristol, England, a plumber was employed to convey water through a leaden pipe from a cistern in one of the upper stories to the kitchen below, and it happened that the lower end of the tube was burst nearly every time the cock was used. After several attempts to remedy the evil, it was determined to solder one end of a smaller pipe immediately behind the cock, and to carry the other end to as high a level as the water in the cistern; and now it was found that on shutting the cock the pipe did not burst as before, but a jet of considerable height was forced from the upper end of this new pipe: it therefore became necessary to increase its height to prevent the water escaping from it—upon which it was continued to the top of the hospital, being twice the height of the supplying cistern, but where to the great surprise of those who constructed the work, some water still issued: a cistern was therefore placed to receive this water, which was found very convenient, since it was thus raised to the highest floors of the building without any extra labor. Here circumstances led the workmen to the construction of a water-ram without knowing that such a machine had been previously devised.

The first person who is known to have raised water by a ram, designed for the purpose, was Mr. Whitehurst, a watchmaker of Derby, in England. He erected a machine similar to the one represented by the next figure, in 1772. A description of it was forwarded by him to the Royal Society, and published in vol. lv., of their Transactions.

poses, may serve to raise a portion of their contents to a higher level; an object that does not appear to have been previously attempted, or even thought of. The device also exhibits another mode, besides that by pressure engines, of deriving motive force from liquids thus drawn, and consequently opens another way by which the immense power expended in raising water

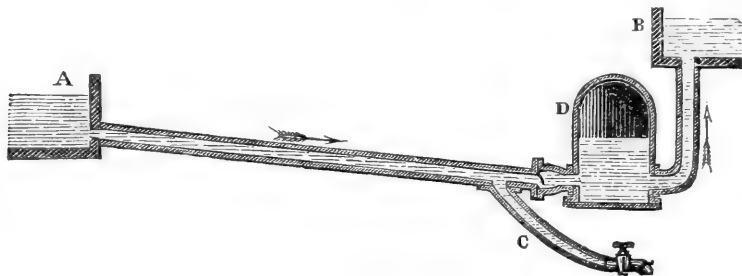


Fig. 13. Whitehurst's Water-Ram.

A, represents the spring or reservoir, the surface of the water in which was of about the same level as the bottom of the cistern B. The main pipe from A to the cock at the end of C, was nearly six hundred feet in length, and one and a half inches bore. The cock was sixteen feet below A, and furnished water for the kitchen offices, &c. When it was opened the liquid column in A C was put in motion, and acquired the velocity due to a fall of sixteen feet; and as soon as the cock was shut, the momentum of this long column opened the valve, upon which part of the water rushed into the air-vessel and up the vertical pipe into B. This effect took place every time the cock was used, and as water was drawn from it at short intervals for household purposes, "from morning till night—all the days in the year," an abundance was raised into B, without any exertion or expense.

Such was the first water-ram. As an original device, it is highly honorable to the sagacity and ingenuity of its author; and the introduction of an air vessel, without which all apparatus of the kind could never be made durable, strengthens his claims upon our regard. In this machine he has shown that the mere act of drawing water from long tubes for ordinary pur-

for the supply of cities, may again be given out with the liquid from the lateral pipes. Notwithstanding the advantages derived from such an apparatus, under circumstances similar to those indicated by the figure, it does not appear to have elicited the attention of engineers, nor does Whitehurst himself seem to have been aware of its adaptation as a substitute for forcing pumps, in locations where the water drawn from the cock was not required, or could not be used. Had he pursued the subject, it is probable the idea of opening and closing the cock (by means of the water that escaped) with some such apparatus as figured in No. 160, would have occurred to him, and then his machine being made self-acting, would have been applicable in a thousand locations. But these additions were not made, and the consequence was, that the invention was neglected, and but for the one next to be described, it would most likely have passed into oblivion, like the steam machines of Branca, Kircher, and Decaus, till called forth by the application of the same principle in more recent devices.

Whenever we peruse accounts of the labors of ingenious men, in search of new discoveries in science or the arts, sympathy leads us to rejoice at their success and to grieve at their failure: like the readers of

a well written novel who enter into the views, feelings and hopes of the hero; realize his disappointments, partake of his pleasures, and become interested in his fate; hence something like regret comes over us, when an industrious experimenter, led by his researches to the verge of an important discovery, is, by some circumstance diverted (perhaps temporarily) from it; and a more fortunate or more sagacious rival steps in and bears off the prize from his grasp—a prize, which a few steps more would have put him in possession of. Thus Whitehurst with the water-ram, like Papin with the steam-engine, discontinued his researches at the most interesting point—at the very turning of the tide that would have carried him to the goal; and hence the fruit of both their labors has contribut-

but the momentum of the water it is employed to elevate. Like the organization of animal life, and the mechanism by which the blood circulates, the pulsations of this admirable machine incessantly continue day and night, for months and years; while nothing but a deficiency of the liquid, or defects in the apparatus can induce it to stop. It is, compared to Whitehurst's, what the steam-engine of Watt is to that of Savary or Newcomen.

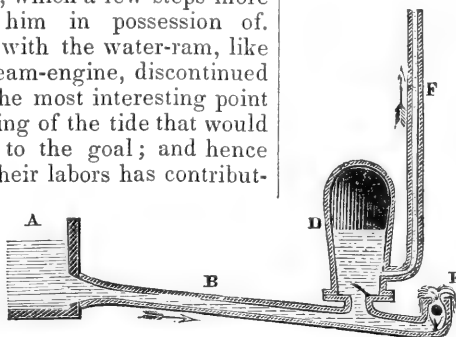


Fig. 14. Montgolfier's Ram.

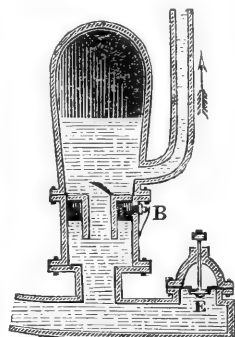


Fig. 15. The Same.

ed but to enhance the glory of their successors.

The *Bèlier hydraulique* of Montgolfier was invented in 1796. (Its author was a French paper maker, and the same gentleman who, in conjunction with his brother, invented balloons in 1782.) Although it is on the principle of Whitehurst's machine, its invention is believed to have been entirely independent of the latter. But if it were even admitted that Montgolfier was acquainted with what Whitehurst had done, still he has, by his improvements, made the ram entirely his own. He found it a comparatively useless device, and he rendered it one of the most efficient—it was neglected or forgotten, and he not only revived it, but gave it a permanent place among hydraulic machines, and actually made it the most interesting of them all. It was, previous to this time, but an embryo; when, like another Prometheus, he not only wrought it into shape and beauty, but imparted to it, as it were, a principle of life, that rendered its movements *self-acting*; for it requires neither the attendance of man, nor anything else, to keep it in play,

Fig. 14 represents a simple form of Montgolfier's ram. The motive column descends from a spring or brook A through the pipe B, near the end of which an air chamber D, and rising main F, are attached to it as shown in the cut. At the extreme end of B, the orifice is opened and closed by a valve E, instead of the cock in fig. 13. This valve opens downwards and may either be a spherical one as in fig. 14, or a common spindle one as in fig. 15. It is the play of this valve that renders the machine self-acting. To accomplish this, the valve is made of, or loaded with, such a weight as just to open when the water in B is at rest; *i. e.* it must be so heavy as to overcome the pressure against its under side when closed, as represented at fig. 15. Now suppose this valve open as in fig. 14, the water flowing through B soon acquires an additional force that carries up the valve against its seat; then, as in shutting the cock of Whitehurst's machine, a portion of the water will enter and rise in F, the valve of the air chamber preventing its return. When this has taken place, the water in B has been brought to

rest, and as in that state its pressure is insufficient to sustain the weight of the valve, E opens; (descends) the water in B is again put in motion, and again it closes E as before, when another portion is driven into the air vessel and pipe F; and thus the operation is continued, as long as the spring affords a sufficient supply and the apparatus remains in order.

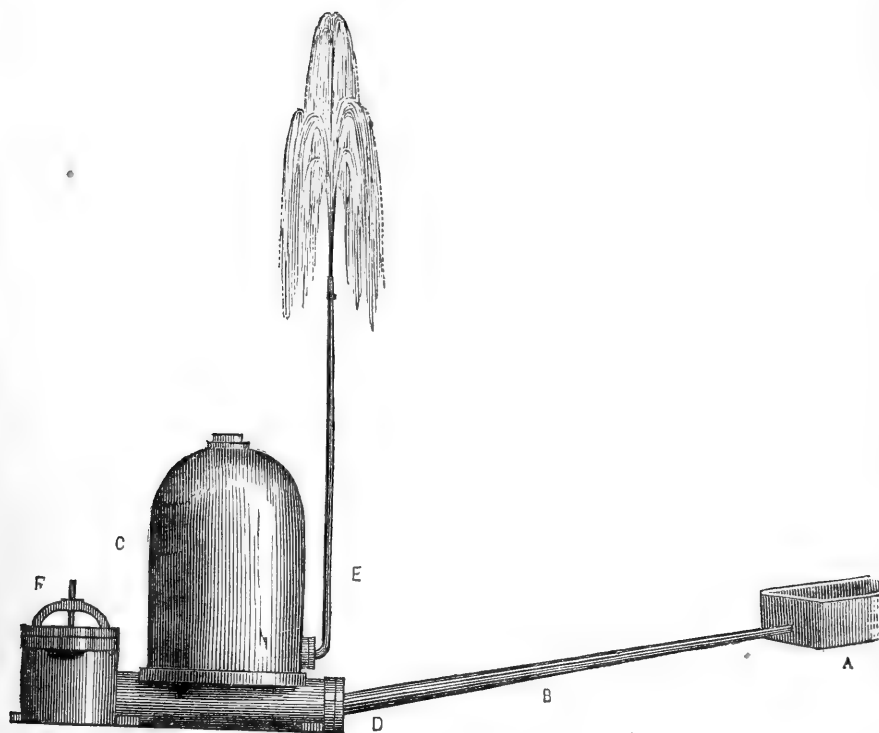
The surface of the water in the spring or source should always be kept at the same elevation, so that its pressure against the valve E may always be uniform—otherwise the weight of E would have to be altered as the surface of the spring rose and fell.

This beautiful machine may be adapted to numerous locations in every country. When the perpendicular fall from the spring to the valve E is but a few feet, and the water is required to be raised to a considerable height through F, then, the *length* of the ram or pipe B, must be increased, and to such an extent that the water in it is not forced back into the spring when E closes, which will always be the case if B is not of sufficient length. Mr. Millington, who erected several in England, justly observes that a very insignificant pressing column is capable of raising a very high ascending one, so that a sufficient fall of water may be obtained in almost every running brook, by damming the upper end to produce the reservoir, and carrying the pipe down the natural channel of the stream until a sufficient fall is obtained. In this way a ram has been made to raise one hundred hogsheds of water in twenty-four hours, to a perpendicular height of one hundred and thirty-four feet, by a fall of only four feet and a half. M. Fischer of Schaffhausen, constructed a water-ram in the form of a beautiful antique altar, nearly in the style of that of Esculapius, as represented in various engravings. A basin about six inches in depth, and from eighteen to twenty inches in diameter, received the water that formed the motive column. This water flowed through pipes three inches in diameter that descended in a spiral form into the base of the altar; on the valve opening a third of the water escaped, and the rest was forced up to a castle several hundred feet above the level of the Rhine.

A long tube laid along the edge of a rapid river, as the Niagara above the falls, or the Mississippi, might thus be used instead of pumps, water-wheels, steam-engines and horses, to raise the water over the highest banks and supply inland towns, however elevated their location might be; and there is scarcely a farmer in the land but who might, in the absence of other sources, furnish his dwelling and barns with water in the same way, from a brook, creek, rivulet or pond.

If a ram of large dimensions, and made like fig. 14, be used to raise water to a great elevation, it would be subject to an inconvenience that would soon destroy the beneficial effects of the air chamber. When speaking of the air vessels of fire-engines, in the third book, we observed that if air be subjected to great pressure in contact with water, it in time becomes incorporated with or absorbed by the latter. As might be supposed, the same thing occurs in water-rams; as these, when used, are incessantly at work both day and night. To remedy this, Montgolfier ingeniously adapted a very small valve (opening inwards) to the pipe beneath the air chamber, and which was opened and shut by the ordinary action of the machine. Thus, when the flow of the water through B is suddenly stopped by the valve E, a partial vacuum is produced immediately below the air chamber by the recoil of the water, at which instant the small valve opens and a portion of the air enters and supplies that which the water absorbs. Sometimes this *snifting* valve, as it has been named, is adapted to another chamber immediately below that which forms the reservoir of air, as at B in fig. 15. In small rams a sufficient supply is found to enter at the valve E.

Although air chambers or vessels are not, strictly speaking, constituent elements of water-rams, they are indispensable to the permanent operation of these machines. Without them, the pipes would soon be ruptured by the violent concussion consequent on the sudden stoppage of the efflux of the motive column. They perform a similar part to that of the bags of wool, &c., which the ancients, when besieged, interposed be-

Fig. 16. *Montgolfier's Water Ram.*

tween their walls and the battering rams of the besiegers, in order to break the force of the blows.

The ram has also been used in a few cases to raise water by atmospheric pressure from a lower level, so as to discharge it at the same level with the motive column or even higher.

The device by which Montgolfier made the ram self-acting, is one of the neatest imaginable. It is unique: there never was anything like it in practical hydraulics, or in the whole range of the arts; and its simplicity is equal to its novelty, and useful effects. Perhaps it may be said that he only added a valve to Whitehurst's machine: be it so—but that simple valve instantly changed, as by magic, the whole character of the apparatus—like the mere change of the cap, which transformed the Leech Hakim into Saladin.* And the emo-

tions of Cœur de Lion, upon finding his great adversary had been his physician in disguise, were not more exquisite than those, which an admirer of this department of philosophy experiences, when he contemplates for the first time the metamorphosis of the English machine by the French Savan. The name of Montgolfier will justly be associated with this admirable machine in future ages. When all political and ecclesiastical crusaders are forgotten, and the memories of all who have hewed a passage to notoriety merely by the sword, will be detested—the name of its inventor will be embalmed in the recollections of an admiring posterity.

Montgolfier's water-ram is now manufactured in this country, by Mr. H. M. BIRKENBIRNE, 17 South Eighth-street, Philadelphia. Fig. 16 represents the exterior of the apparatus.

* Walter Scott's *Tales of the Crusaders*.

We find it is used and much approved now, in some parts of Pennsylvania, for supplying farm-houses, factories, gardens, etc. Its comparatively trifling cost, (not more, in many cases, than that of a well and pump,) as well as its simplicity and effectiveness, must soon make it extensively known to the public.

This machine is now manufactured in Philadelphia, of all sizes, to suit the supply of water at hand. By giving the manufacturer the amount of water which the brook or spring yields, as an overflow per minute, the head or fall that may be procured, and the height and distance to which it is desired to convey the water, the proper ram and pipes can be sent to any part of the country.

Mr. BIRKENBIRNE has one of these rams, which raises water sixty-five feet, with sixteen inches fall. A supply of *half a gallon* of water per minute, is sufficient to drive

the smallest sized ram, while the largest made at Philadelphia, requires fifty gallons per minute. Our readers may learn the proportionate cost, when we inform them that a ram calculated to fit a spring with an overflow of six gallons per minute, where a fall of five feet can be obtained, and which will raise twelve hogsheads of water daily, to an elevation fifty feet high, would cost in Philadelphia but eighteen dollars.

The fact that the hydraulic ram is self-acting, and that it works with an amount of water power infinitely less than any other machine, must, we think, as soon as its construction is known, bring it into general use, in this country. There are many places within our knowledge, where the economy it would effect, in giving an abundant supply of water to all parts of the country-house and grounds, would be equal to double its cost in a single year.

REVIEWS.

TRANSACTIONS OF THE NEW-YORK STATE AGRICULTURAL SOCIETY. Vol. VI. 1846. Albany. C. VAN BENTHUYSEN & Co., Public Printers.

THE Transactions of our State Agricultural Society, are printed at the expense of the State, and distributed largely by the members of the Legislature. Five hundred copies are also placed at the disposal of the State Society itself; five hundred in the hands of the American Institute, New-York; and forty copies are given to each county society, for distribution among its members. In this way, the work is placed gratuitously within the reach of all our citizens really interested in the progress of agriculture.

The present volume, compiled under the direction of B. P. JOHNSON, Esq., the pre-

sent Secretary, comprises 716 pages. Besides the actual business reports of the Society, the reader will find a variety of very interesting essays, by many of the most intelligent farmers and agricultural writers in the State. Among these, we may especially point out those of Mr. RANDALL, on the management of merino sheep; Mr. NOTT, on the wool trade; Mr. GEDDES, on *plank roads*; Mr. HOWARD, on Galloway cattle; Mr. PELL, on the use of lime, and on soiling; Dr. FITCH, on the Hessian fly; Mr. STEVENS, on the Canada thistle, etc.

There are two articles which commend themselves more especially to our notice: one, the report of the committee on Fruits, and the other, the communication of N.

LONGWORTH, Esq., of Cincinnati, on Vineyards.

The Fruit Committee, at the desire of the Society, and considering "the apple orchard an item of national wealth," undertook, several months previously to the annual meeting, to collect and digest opinions necessary to enable them to recommend a select list of *thirty varieties* of apples. They have accordingly published in their report a selection as follows:

"Early Harvest, Early Strawberry, Large Yellow Bough, Early Joe, and William's Favorite, all of which are summer apples."

"Fall Pippin, Golden Sweet, Gravenstein, Jersey Sweeting, Porter, Rambo, Detroit Red, Bellebonne, for autumn use.

"Baldwin, Yellow Bellefleur, Hubbards-ton Nonsuch, Jonathan, Newtown Pippin, Northern Spy, Blue Pearmain, Rhode Island Greening, American Golden Russet, Roxbury Russet, Swaar, Ladies' Sweeting, Tallman Sweeting, Esopus Spitzenbergh, Vandervere, Waxen Apple, Westfield Seek-nofurther, for winter use and exportation."

We extract also the following:

"Any variety of apple, to be worthy of extensive cultivation, should be, as nearly as possible, perfect of its kind. Some are quite so. A positively good apple should possess the following qualifications:

"1st. The wood of the tree should be hardy and vigorous in its growth, spreading in its shape, graceful in its appearance, and an abundant and annual bearer.

"2d. The fruit should be uniformly distributed over the tree, not in clusters, but with a strong stem holding it firmly to the limb, and not subject to fall in ordinary high winds.

"3d. The size should, as near as may be, range from medium, to moderately large; such usually combining higher flavor and sounder quality, than the quite

small, or the extraordinarily large varieties. A very small apple is apt to be astringent; a very large one coarse and spongy. The flesh of a perfect apple should be solid, heavy, juicy and brittle [crisp?]. It should be, also, brisk in its flavor, which should always be agreeable, whether that flavor be tart, sub-acid, or sweet.

"4th. Its shape should be fair, [and we would add, regular,] of agreeable appearance, small in the core, and delicate in the skin.

"Such qualities constitute a perfect apple; and the varieties we have chosen, in the names reported for consideration, mostly possess these qualities in an eminent degree."

All the apples in the committee's list but two, are, we observe, American varieties. They state, indeed, that they consider the favorite region of this fruit "lies between 40° and 44° north; between these ranges flourish probably the best specimens the world has ever produced."

Mr. LONGWORTH's article, though written with but little method, contains a great deal of valuable practical information. To this gentleman's perseverance, we owe the fact that the Ohio river is at the present moment dotted with some hundreds of thriving and productive vineyards, yielding a wholesome light wine, strongly resembling Rhenish, and manufactured mainly of the pure juice of one of our native grapes—the Catawba. There are those who listen with incredulity to the statements of the profit of wine making in this country, and with doubt and distrust at the wisdom of the production of wine itself. We are not of the number. We are confident that vineyards, in the warmer portions of the middle states, will eventually become a profitable investment of the land; and that an abundance of *pure*, cheap, light wines, will ab-

solutely tend to diminish the existing intemperance of the country.

We would be glad to copy Mr. LONGWORTH's article entire, but want of space obliges us to make the following concise abstract of its contents.

Mr. LONGWORTH repeats, what almost every practical cultivator knows, but what no foreigner, and but few others, who have not tried it for themselves, will believe, viz.: that it is entirely useless to attempt to make vineyards of the foreign varieties of the vine. His own experiments of this kind have been made at different times, with 10,000 vines from France, and 5,000 from Madeira—comprising all the most celebrated sorts from the extreme northern parts of France and Germany, as well as those from the warmer wine districts. "I went to the expense," says he, "of trenching soil on a side hill, placing a layer of stone and gravel at the bottom, with a drain to carry off the water, and put in a compost of rich soil and sand three feet deep, and planted on it a great variety of these foreign wine grapes. All failed: and not a single plant is left in my vineyards." We may add, that the same results attended the experiments of M. LOUBAT, and M. PARMENTIER, skilful French *vignerons*, who made very extensive plantations of French grapes on Long Island.

After this, it is clear enough that it is on native grapes alone that Americans must rely for vineyards. Among all the native sorts, Mr. LONGWORTH prefers the *Catawba*, as being most productive, and as making much the best wine, an opinion in which, both from some experiments of our own, and from samples sent us by this gentleman, we fully coincide. The *Isabella* is only fit for making sweet wine, while the *Catawba* makes both hock and sparkling champagne of excellent quality. The *Al-*

exander's, or *Schuylkill Muscadell*, (*Cape* grape of some,) makes a good dry wine, resembling Teneriffe. Mr. L. considers it one of the surest bearers. The *Missouri*, he says, bids fair to be a valuable wine grape, and the *Herbemont* would be very valuable, both for the table and for wine, if it were less subject to rot. The *Isabella* ripens unequally at Cincinnati, and is liable to decay on the vines.

The sites which Mr. LONGWORTH prefers, are the tops and sides of the steep hills on the Ohio, the soil of which is fertile. The north sides being the richest, and the season at Cincinnati being sufficiently warm, fully to ripen the grape there, he prefers the north side to the south. He prepares the land by *terracing*, where it is so steep as to require it—the terraces being held up by ridges of sod. The soil is then trenched from eighteen inches to two feet deep, care being taken not to throw up more than three or four inches of the subsoil, where the latter is stiff loam or clay. If the ground is not so steep as to wash, deep plowing alone is sufficient.

In planting the vines where the ground is level, he arranges them in rows five or six feet apart, the plants being four and a half feet apart in the rows.

The Ohio vineyards are mostly started with cuttings, planted early in the spring. These are set two in each hill, inserted so that the tops approach within two or three inches, though they are widely separated at the lower ends. Two are put in, so as to provide for failures, and one is thus easily removed, without disturbing the other—should both grow.

The second year after the cutting is planted, (really the first year of growth,) the plant is headed down to two or three buds; these are examined as soon as they begin to shoot out, and all but the strong-

est are rubbed off. Little other attention is given this season, except breaking or pinching off, towards the close of summer, the three or four lower lateral shoots, (second growth.)

The following spring, the vines are headed down to four buds. The two strongest of these are permitted to grow, and all the laterals that start out of them, from the ground to three or four feet high, are pinched off.

The next year, (the third of growth,) a small crop of fruit is expected. The strongest branch is now pruned from two to three feet long, according to the growth of the plant, to prepare it for bearing. The other branch is cut back lower, so as to leave but five buds, three only of which, the most vigorous, are allowed to grow—the laterals being taken out as they appear.*

The next year, the whole bearing wood of the previous season is cut out, leaving none of the two year old wood. The other shoots are allowed to bear this year, while new shoots are brought up from the base of the shoot, cut out, to replace the bearing ones next season. In this way—the *renewal* mode—the fruit-spurs are always pushed out from young canes, and all the shoots come out within a foot or eighteen inches of the ground—the vines being trained, as in the greater part of Europe, on single poles, five or six feet high.

In making wine, the grapes are gathered as soon as fully ripe, it being found that over-maturity, though it adds saccharine matter, injures the flavor and aroma of the wine. If red wine is desired, the grapes are mashed and partially fermented before pressing: if a light wine, then they are crushed and pressed at once. Mr. LONGWORTH has no faith in the doctrine, current

abroad, that in the quality of wine all depends on soil and exposure, so that the product of one man's vineyard is worth a dollar a bottle, while that of his neighbor is comparatively valueless. With us the quality depends chiefly on the care and attention of the manufacturer. Wine requires much greater skill and care in the manufacture, than cheese or butter, yet one tenant, on a given farm, will make butter of a superior quality, whilst that made perhaps by his successor, on the same farm, and with the same facilities, is scarcely fit for use, and will not command half price in the market. In Europe, it is a standing proverb, that "a poor man cannot make good wine." He is compelled to sell his wine when new, and cannot devote the necessary attention, and wait till it attains sufficient age to bring out its character.

The Ohio wines command a ready sale in Cincinnati, at prices from \$1 to \$1.50 per gallon. Mr. LONGWORTH gives it as the result of thirty years experience, that the average full crop per acre there is 200 gallons. His vintage last year was 300 barrels, less by 200 barrels than was anticipated, owing to a partial failure in the crop. Formerly he used to add, before fermentation, from six to ten ounces of sugar to the gallon of juice, of the Catawba grape. But the practice now, when the grapes are well ripened, is, to add neither sugar nor spirit.

Mr. LONGWORTH's success in vineyard culture, is partly owing to his sagacity and generosity in employing poor, hardworking German families, familiar with the culture of the grape, but having no means. Mr. L. started these poor emigrants, by furnishing the land, the grape cuttings, and the small outfit necessary in the beginning. In return, he receives half the wine, at the press, and half the amount of any fruit sold. Most of his tenants have occupied

* "In breaking out the lateral shoots, it should not be done till after the wood begins to ripen. If done too soon, it forces out the fruit buds of the next year."

their little vineyards from ten to twenty-five years, and are "contented and happy, if not rich." One of them, who works harder than any of the others, and keeps his family at work, and devotes most of his time to the vineyard, made from his wine last year \$1.400.

"The day is not distant," says Mr. Longworth, "when the banks of the Ohio will rival the banks of the Rhine, in the quality and quantity of the wine produced. Our German emigrants are the people who will accomplish it. Our hills, suitable for wine, are of little value for other cultivation. Give a German ten acres of this land, and, if he has a wife and children, he will live in great luxury. He will never want for his two greatest of all luxuries, *wine* and *sour-croute*. His children, however small, not only aid him in the cultivation, but his wife, during the summer and fall, does the greater part of the labor in the vineyard. The poor vine-dressers in Germany, are seldom so rich as to own a horse, and therefore over-estimate their value. Yet, greatly as they value the acquisition of a broken-down pony in this country, it does not lessen their estimation of the great value of their wives in the vineyards. A very honest Dutch tenant of mine, who was so unfortunate as to lose his wife, observed to me, 'he might just as well have lost his horse!'"

FOREIGN NOTICES.

HORTICULTURAL SATIRE.—M. ALPHONSE KARR, one of the most racy and piquant of the French writers of the day, has printed the following *jeu d'esprit*, aimed at certain classes of devotees in general science no less than horticulture, who, by continually fixing their attention upon the minutiae of their favorite pursuits, seem to lose the capacity for enjoying or understanding all else that is interesting in the universe. We translate from the *Journal d'Agriculture pratique*.

Société des Amateurs des Concombres.—A new horticultural society is about being formed in England. The members of this society have remarked that the mind of man is too narrow to embrace a sufficient admiration of the works of the Creator; they have observed that many have already had an instinct of this truth; that horticulturists, for example, have no estimation of insects; that entomologists pride themselves upon being almost ignorant that there are flowers; that among horticulturists themselves, some love nothing but tulips; and that among amateurs there are some who have no regard for any tulips but those with white grounds, and indeed among tulips with white grounds only value those varieties which form a part of their own collection. In this way, by consecrating their whole life and all their faculties to the study and the admiration of a single flower, they are able at last sufficiently to admire and appreciate it!

The new society in question aims to apply this division of mental labor to vegetables. It will devote itself to *Cucumbers*, and will take the title of the "*Society of Cucumbers*," in the hope of inducing other new societies to consecrate themselves to other species of vegetables. *Alphonse Karr*.

FLORAL EMBELLISHMENTS FOR FARM-HOUSES.

Talk not to me of the suburban residences, with their windows decorated with geraniums and heaths, with hyacinths and irises. I would also have the windows of our farm houses adorned with flowers, not in rusty tin measures, and old black glazed spoutless teapots, and glass bottles with their necks broken off, but in whole and handsome flower pots, or neatly painted wooden boxes, for they really cost little or nothing. I would have the piazzas or porches trellised with vines, even with scarlet runners, if nothing else could be had. I would have the door-yard filled with flowers and shrubbery, and the roadside lined with trees—here a clump, and there a single line, mingling the varieties as nature mingles them, cultivating them for fruit, and cultivating them also for ornament and beauty; but this is all, you will tell me, for mere appearance sake. Well, I will reply, is appearance nothing? Do you think nothing of appearance when you choose your wives, and nothing of your own appearance when you wish them to confirm the election? But why should the pleasure of sight be so lightly esteemed! Why should they be spoken of in language of disdain or indifference? Are they not as rational, as respectable, as valuable as abundant, and as innocent as the other senses? Are they not, indeed, the very elements of some of the most refined pleasures of the mind and heart? Has God given us the sense of sight, so wonderful, so capacious, so infinitely varied in its resources and objects, for no purpose? Is appearance nothing, even though it be the window of a farm-house? What is more studied than appearance throughout the work of the Creator? What object is there in nature, from the highest to

the lowest, animate or inanimate, swimming in the sea, or in the air, or the surface of the earth, or buried beneath it, which is not, upon examination, found to be as beautiful as if it were finished for no other purpose than to be looked at? Take the shell that lies at the bottom of the ocean, the bird that bathes his wings in heaven's purest light, the flowers that carpet the earth with their varied splendor, the glittering stars that light up the deep arches of the skies with an eternal glory—take the combination of the countless elements of beauty, when the morning slowly lifts up the veil of night, and as at the dawn of the creation, reveals the glories of the visible world; or when spring breathes upon the earth, and recalls the dead to life, and myriads and myriads of forms of new things come forth at her voice—take the descending sun as he reclines upon his western throne, and wraps around him the gorgeous robe of unrivalled majesty—take the perfection of beauty as seen in a nearer but more transcendent form in man himself, in his symmetrical stature, in his well turned limbs, in the web of unmelted softness and texture which covers him, in the tints of his complexion, in the grace of his movements, in the melody of his voice, in the eloquence of the eye, pouring out the fires of genius, or radiant with the charms of the affections that speak so powerfully to the soul—and will, then, men say that appearance is nothing, and that the pleasures of the sight are not to be valued and cultivated? I say, that appearance is always to be regarded, and that we cannot render our homes too beautiful and attractive. Home is the paradise of human life, and poor and wretched, indeed, must that creature be who, looking round the habitable world, cannot point to one nook of earth, and say, "There is my home?" Our first object should be to make our homes as convenient and comfortable as we can make them, and our second object should be to render them, to an equal extent, tasteful and elegant. *London Garden. and Florist.*

ANALOGIES IN ANIMALS AND PLANTS.—The functions of animals and plants are in a like degree analogous. Animals take in their food by the agency of the mouth, and prepare it for digestion either by various degrees of mastication, or by attrition, as in the gizzards of birds. In this they differ from plants; but these have a sufficient compensation, inasmuch as that they imbibe their food in a fluid form, liquid or aeriform, and consequently in a state already of the finest possible division. Animal and vegetable remains are their common food, and salts of various kinds are their condiments and stimulants; plants having this advantage over animals, that as they absorb only the soluble and finer parts of their nutriment, and their absorbing organs have the power of rejecting that which is offensive, they have no offensive matters to separate, such as appear in the excrements of animals.

In the animal stomach, the food undergoes an extensive change, being reduced to a pulp of greater specific gravity, and being altered entirely both in taste and odor. In the sap vessels of plants, which may be truly considered as their primary organ of digestion, their food or sap undergoes a change precisely similar; its colour and flavor are altered, and its specific gravity increased.

From its stomach, the animal's food passes into the intestines, is there subjected to the action of the bile, and the chyle or nutritive portion separated from that which is excrementitious. In its passage through the intestines, the chyle is absorbed by the lacteal vessels, and conveyed into the blood; and these mingled liquids are propelled by the heart into the lungs; to be there exposed to the action of the air. The vital liquid now changes its purple hue to a florid red, loses a portion of its carbon and watery particles, the former combining with the oxygen of the atmospheric air in the lungs, and being breathed forth in the form of carbonic acid gas. As plants take in as food no gross unneeded ingredients, it is obvious that no process like the biliary operation is required in their course of digestion. But in them the food or sap, proceeding at once along the branches, is poured into the leaves, which are the very lungs of the vegetable world. Here, as is the blood, its colour is changed, and oxygen emitted from it during the light hours of the twenty-four; but carbonic acid is breathed forth during the night, and at all periods, a considerable amount of watery vapor is emitted.

From the lungs, by the agency of the heart, the blood is propelled through the arteries over the whole animal frame, supplying nourishment and warmth to all the parts, and where, by those being abstracted, it is again converted into purple or venous blood, and is returned by the veins to undergo a repetition of those changes already noted as being effected in the lungs. In plants, the sap, after exposure to the action of the air in their leaves, is returned by another set of vessels, situated in the bark, ministering to the growth and support of the whole plant. It is true, that only under certain circumstances, detailed in another chapter, is heat evolved during the processes of vegetation; but the circulation of the sap in plants, beyond all doubt, enables them to resist the frosts, the most intense and prolonged, we find the interior of trees remain unfrozen; and under the meridian sun of the tropics, the sap of the palm and all other trees retains a temperate coolness. This power to resist extremely elevated and depressed temperatures is characteristic of all animated nature.

Such is the close similarity in the digestive and circulatory processes characterising the members of the two great kingdoms of organised nature, a resemblance which obtains in all the other functions enjoyed by them in common. During respiration, the air inhaled by animals through the mouth and nostrils, proceeds immediately to the lungs, and acts upon the blood; in plants, the air inhaled by their leaves operates instantaneously upon the sap. The changes which occur have been detailed in previous pages, and there it has been shown, that as oxygen is the vital air of animals, so that gas and carbonic acid gas are equally essential to plants. If animals be placed in a situation where they inhale pure oxygen, their functions are highly excited and increased in rapidity; but it is an exhilaration speedily terminating in exhaustion and death, if the inhalation be continued for a protracted time. So plants will flourish with an increased vigor in atmosphere containing one-twelfth of carbonic acid, but even this brings on premature decay; and if it ex-

ceeds that proportion, destruction is still more rapidly induced. During sleep, animals exhale less carbonic acid than during their waking hours, so plants emit a much diminished amount of oxygen during the night. *Johnson's Principles of Gardening*.

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TO DESTROY EARWIGS ON THE DAHLIA.—In light soils the first scourge of the Dahlia is the earwig; this insect increases by myriads, and is very fond, not of the roots, but of the young shoots and flowers of the Dahlia. In vain I used sulphur, tobacco, soot, etc.; every morning the earwigs surrounded the new shoots, and in a few moments all were devoured. I then had collars or bands of tin made, (the use of zinc would be less expensive,) about one inch and three-quarters in breadth, and large enough to form an opening of about the same diameter. I sunk these bands in the ground around the Dahlias, to the depth of about a quarter of an inch, (we know that the earwig does not penetrate very deep below the soil;) I then rubbed the outside of the bands with the sediment or refuse of lamp oil. This method was perfectly successful; the next day and the following days, I saw the earwigs checked by the bands, where the oil with which they were gorged, had fastened them, and I was thus freed from these voracious insects. *Revue Horticole*.

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GREEN VEGETABLES FOR WINTER USE.—It may be well to notice, at this season, a method of preserving green peas, string and shell beans, vegetables in such general use.

The green peas, etc., are first placed in a copper vessel (or common tin stew-pan) with an ounce of sugar to a quart of peas, exposing them to a gentle heat, stirring them constantly until the sugar is all taken up; they are then placed on a sieve reversed, and put into a spent oven after the bread is withdrawn, where they remain until perfectly dry, when they are put into paper bags, and kept free from damp.

Another method consists in throwing them into boiling water, afterwards into cold water, and then drying them in the same way, as directed above. This last method applies also to beans; always observing that string beans, before being placed in boiling water, should have the stringy parts removed, and be cut in two. Before the vegetables, thus prepared, are used, they should be soaked for several hours in lukewarm water. *Revue Horticole*.

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CULTURE OF THE PINE TRIBE.—"The Duke of Bedford took a warm interest in planting. The Evergreen Drive at Woburn was planted by him with various kinds of Pine and Fir, selected with the assistance of Philip Miller, and thinned by his own care. Indeed, on this last point, an anecdote has been related characteristic of his disposition. In the year 1743, the Duke planted the large plantation in Woburn park known by the name of 'Evergreens,' to commemorate the birth of his daughter, afterwards Caroline, Duchess of Marlborough. The space was something more than 100 acres, and was before that time a rabbit-warren, producing nothing but a few blades of grass,

with the heath or ling indigenous to the soil, and without a single tree upon it. In the course of a few years, the Duke perceived that the plantation required thinning, in order to admit a free circulation of air, and give health and vigor to the young trees. He accordingly gave instructions to his gardener, and directed him as to the mode and extent of the thinning required. The gardener paused and hesitated, and at length said, 'Your Grace must pardon me if I humbly remonstrate against your orders; but I cannot possibly do what you desire: it would at once destroy the young plantation, and moreover, it would be seriously injurious to my reputation as a planter.' The Duke replied, 'Do as I desire you, and I will take care of your reputation.' The plantation was consequently thinned according to his instructions, and the Duke caused a board to be fixed in the plantation facing the road, on which was inscribed 'This plantation has been thinned by John Duke of Bedford, contrary to the advice and opinion of his gardener.' Of the plantation so formed, Mr. Forbes, the present gardener of Woburn Abbey, says in the preface to the *Pinetum Woburnense*, privately printed, 'In the Woburn Evergreen plantation, formed in 1743, and which consists principally of the Coniferous tribe, many beautiful feathered specimens, with majestic stems, may be seen. They may be pronounced as unequalled by any other plantation in the kingdom; particularly the *Pinus pinaster*, *strobis*, *sylvestris*, *rigida*, *cembra*, *Abies pectinata*, and the *Cedrus Libani*; which may be chiefly attributed to the judicious thinning applied to that plantation when in a young state.' I may, perhaps, be excused for inserting another paragraph on the same subject, from the introduction written by my father:—"The culture of the family of the Coniferæ may be said to be almost in its infancy in this country. The numerous species of Pines introduced into Europe from distant climes, from the Himalayan range of mountains, and other parts of India, has given a new zest to those who take pleasure in bringing forward and cultivating hitherto unknown productions of the vegetable world; and, without going into an inquiry respecting the commercial advantages to be derived from the knowledge which we are yearly, (I may almost say daily,) acquiring of the growth and value and properties of trees, I will content myself with observing that the genus *Pinus* is probably entitled to wonder and admiration beyond all others; and that at no distant period, we may see the *Abies* (*Cedrus*) *deodara*, the *Abies douglasii*, and others of similar grandeur, naturalised and flourishing among the Cedars of Lebanon, in our British forests." *Correspondence of John, Fourth Duke of Bedford, with an Introduction by Lord John Russell, Vol. 1, Introduction, pp. liii—lvi.*

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THE ORANGE TREE.—The following analysis of the ashes of the Orange tree, taken from the report in the London Literary Gazette, of the meeting of the Chemical Society on the fifth April, 1847, may possibly be interesting to some of your readers:—"Analysis of the ashes of the Orange tree (*Citrus aurantium*.)" by Messrs. T. H. Rowney, and H. How. The materials employed in this examination were supplied by M. Da Camera, of the island of

St. Michael's. After describing the methods of preparing the ash, and the routine of analysis, the authors sum up with the following results :

	Root.	Stem	Leaves.	Fruit.	Seed.
Percentage of Ash.....	4.18	2.7	13.73	3.94	3.30
Potash,.....	15.43	11.6	16.51	33.42	40.23
Soda,.....	4.52	3.05	1.63	11.42	0.92
Lime,.....	49.89	55.13	56.32	21.52	18.97
Magnesia,.....	6.91	6.31	5.72	8.06	8.74
Oxide of iron,.....	1.02	0.57	0.52	0.46	0.89
Chloride of sodium,.....	1.18	0.25	6.65	3.87	0.82
Sulphuric acid,.....	13.47	17.06	3.27	11.07	23.24
Sulphuric acid,.....	5.77	4.64	4.43	3.74	5.10
Silicic acid,.....	1.75	1.22	4.83	0.44	1.13
	100.00	100.00	100.00	100.00	100.00

These results confirm the observations of Sausure, that the large amount of mineral constituents is deposited in those parts of the plant in which the process of assimilation appears to be most active. In the ashes of the root, the stem, and the leaves, the joint amount of the lime and magnesia exceeds the rest of the mineral constituents. In the fruit and seed, the alkalies are prevalent. Am I correct in believing that such analyses show the gardener the proper compost to use? —*Citron*.

(Test the value of this analysis by the application of phosphates, *e. g.* cow-dung, or superphosphate of lime.) *Gard. Chron.*

THE CHOCOLATE TREE AND ITS USES.—What is generally called Cocoa, is merely the berries of *Theobroma Cacao*, pounded and drank either with water or milk, or with both. Chocolate is a compound drink, and is manufactured chiefly from the kernels of this plant, whose natural habitat would seem to be Guayquil, in South America, though it flourishes in great perfection in the West Indies. It grows also spontaneously and luxuriantly on the banks of the Magdalena. Mr. Scomburgk, in his recent expedition into the interior of British Guiana, found the country abounding in Cocoa, "which the Indians were most anxious to secure, as the pulpy arillus surrounding the seed has an agreeable vinous taste. Singular to say, however, they appeared perfectly ignorant of the qualities of the seed, which possesses the most delightful aroma. Mr. Scomburgk states, that they evinced the greatest astonishment when they beheld him and Mr. Goodall collecting these seeds and using them as Chocolate, which was the most delicious they had ever tasted." The height of the Cocoa shrub is from eighteen to twenty feet; the leaf is between four and six inches long, and its breadth three or four, very smooth, and terminating in a point like that of the Orange tree, but differing from it in colour; of a dull green, without gloss, and not so thickly set upon the branches. The blossom is first white, then reddish, and contains the rudiments of the kernels or berries. When fully developed, the pericarp or seed vessel is a pod which grows not only from the branches, but the stem of the tree, and is from six to seven inches in length, and shaped like a cucumber. Its colour is green when growing, like that of the leaf; but when ripe, is

yellow, smooth, clear and thin. When arrived at its full growth, and before it is ripe, it is gathered and eaten like any other fruit, the taste being sub-acid. Chocolate, so called, and so prized both in the Spanish Continent and in the West Indies, never reaches Great Britain except as a contraband article, being, like nearly all colonial manufactured articles, prohibited by the Custom-house laws. What is generally drank under that name, is simply the Cocoa boiled in milk, gruel or even water, and is as much like the Spanish or West India Chocolate, as vinegar is to Burgundy. It is, without any exception, of all domestic drinks, the most alimentary; and the Spaniards esteem it so necessary to the health and support of the body, that it is considered the severest punishment to withhold it, even from criminals; nay, to be unable to procure Chocolate, is deemed the greatest misfortune in life! Yet notwithstanding this estimation in which it is held, the quantity made in the neighborhood of Carthagena is insufficient for the demands of the population, and is so highly priced, that none is exported but as presents! The signs by which good Chocolate or Cocoa is known are these:—It should dissolve entirely in water, and be without sediment; it should be oily and yet melt in the mouth; and if genuine and carefully prepared, should deposit no grits or grounds. That made in the West Indies, and in some parts of Cuba, is dark; but that manufactured in Jamaica is of a bright brick color, owing to the greater quantity of annatto which is used in the preparation, and which, I think, gives it a richer and more agreeable flavor. In an economical point of view, Chocolate is a very important article of diet, as it may be literally termed meat and drink; and were our half starved artizans, over-wrought factory children, and rickety millinery girls, induced to drink it, instead of the in nutritious and unwholesome beverage called Tea, its nutritive qualities would soon develop themselves in their improved looks and more robust constitution. The price, too, is in its favor, Cocoa being tenpence per pound; while the cheapest black tea, such as even the Chinese beggar would despise, drank by milliners, washerwomen, and the poorer class in the Metropolis, is four shillings a pound, or 310 per cent dearer, while it is decidedly injurious to health. The heads of the naval and military medical departments in England have been so impressed with the wholesomeness and superior nutriment of Cocoa, that they have judiciously directed that it shall be served out twice or thrice a week to regiments of the line, and to the seamen on board of her Majesty's ships, and this wise regulation has evinced its salutary effects in the improved health and condition of the men. Indeed this has been most satisfactorily established in Jamaica among the troops; and a remarkable fact corroborating this statement is, that by returns to the Horse-Guards, it is shown that only one death took place at Newcastle Barracks, in that island, out of a force of seven hundred men, for the quarter ending September 30, 1842; and that the same may be asserted for other regiments in the West Indies, and of the seamen in her Majesty's ships on the coast.

But the excellent qualities of Chocolate were

known not only to the Mexicans and Peruvians, from whom, as a matter of course, the Spaniards acquired a knowledge of its properties; but European nations also acknowledged its virtues. The Portuguese, French, Germans and Dutch, considered it an exceedingly valuable article of diet, and Hoffman looked upon it both as a food and a medicine. In his monograph, entitled "Totus Chocolate," he recommends it in all diseases of general weakness, macies, low spirits, and in hypochondriacal complaints, and what since his time have been termed nervous diseases. As one example of the good effects of Cocoa, he adduces the case of Cardinal Richelieu, who was cured of eremacausis, or a general wasting away of the body, by drinking chocolate. Liebig and other chemists have demonstrated beyond question, that no part of an organ which possesses motion and life is destitute of nitrogen:—"All parts of the animal body which have a decided shape, which form parts of organs, contain nitrogen; and the chief ingredients of the blood contain 17 per cent. of nitrogen, and no part of an organ less than 17 per cent. It follows, therefore, that nitrogen is that principle of the body, which being in the greatest quantity, and pervading all tissues, is that most frequently wasted, and most frequently in need of renewal. This must be admitted. It follows, then, that those substances which possess this principle in the greatest quantity in a given bulk, are those which must be best calculated to renew that which has been lost or wasted by the operations of the body. Now Caffeine, the principle of Coffee, and Theobromine, the principle of Theobroma Cacao, are the most highly nitrogenised products in nature, as the following analysis will show: Caffeine, according to Pfaff and Liebig, contains,

Carbon,	49.77
Hydrogen,	5.33
Nitrogen,	28.78
Oxygen,	16.12

Theobromine, according to Wokresensky, contains	
Carbon,	47.21
Hydrogen,	4.53
Nitrogen,	35.38
Oxygen,	12.60

—*Dr. Binns, in Symmonds' Colonial Magazine, (abridged.)*

THE HOUSE OF SHAKESPEARE.—The present proprietors of the place of our great poet's birth, are, it appears, compelled to sell it, by the terms of the will of a former owner. The house is a freehold and is valued at about 2,000 pounds. This valuation has been founded on the number of visitors. In 1846 it was calculated that 3,000 people had visited the house, though not more than 2,500 had entered their names in the book kept for the purpose. The house will be sold by auction in the course of the summer, and one or two enthusiastic Americans have already arrived, determined to see what dollars can accomplish in taking it away. The timbers, it is said, are all sound, and it would be no difficult matter to set it on wheels and make an exhibition of it. Every Englishman, however, must hope that no such desecration awaits it. Wholly irrespective of Shakespeare, as one of the few existing examples of an English yeoman's residence, of the reign of Queen Elizabeth, it deserves to be retained among us. *London Chronicle.*

SALE OF MILTON'S HOUSE.—On Tuesday, Berkin Manor House, which is remarkable for having at one time been the residence of Milton, was put up for sale at the auction mart. It is situated in the rural village of Horton, Bucks, near the church, in which the remains of the poet's mother were deposited, and is about five miles from Windsor Castle and Slough. The estate comprised, besides the house, about 15 acres of rich orchard and meadow land. The sum of 2,700 pounds was the highest offer for it, which was below the reserved price. *Ibid.*

TO MAKE SOUR-KROUT.—Select sound, solid cabbages, slice them across, and place the slices in a barrel, in layers about four inches high; over each layer, strew a handful of salt, and some caraway seeds. Press the whole down very tightly; and when the barrel is full, place a very heavy weight upon the end. After standing a week,—more or less according to the temperature—the mass will begin to ferment; and when the fermentation is over the barrel should be headed up. There is no vinegar used in the preparation. Sour-kROUT is considered to be an excellent anti-scorbutic, and is used as such on board ships, in long voyages. *Gard. Chron.*

CULTURE OF ASPARAGUS IN GERMANY.—Numbers 20, 21, and 22, of the Chronicle, the last I have received, contain sundry articles on the culture of Asparagus, by which it appears that in your country the preference is given to Asparagus which is suffered to grow some inches above the ground and which consequently acquires a green color by atmospherical influence. You consider this mode of culture preferable for two reasons: first, because the eatable part of such Asparagus is larger; secondly, because it has a finer flavor.

Living in a part of Germany where the culture of Asparagus is very common, I hope the following remarks, though from a foreigner, will not be unwelcome. Asparagus which has obtained a green color by its being exposed to the air, will neither be grown nor eaten here, and, strange enough, exactly for the same reasons which have been alleged by you for growing it above ground. However, we do not avail ourselves of artificial means, as supposed by you, such as tubes of earthenware or metal, and still our Asparagus, if well managed, is white and eatable almost the whole length.

The manner of growing it is as follows. It is never planted otherwise than in a deep, light and sandy soil, which has been trenched to a depth of three feet, well drained and well manured. A thick layer of horse-dung is put on the bottom of the trench and mixed with the soil. Strong loamy or clayey soil is decidedly disadvantageous to the growth of this vegetable. It will not thrive in it, does not become tender, and will very often become brown spotted, which the common people here call iron-mould (Cipumala,) especially if drainage has been neglected.

We take plants of two or three years' growth according to their vigor, and usually plant them in furrows, which are made at 2 feet distance, and from 1½ to 1¼ feet deep. The distance between the plants is likewise 2 feet. In these furrows the

plants are permitted to grow uncovered from the month of March or April, the usual and best time for planting, till the beginning or middle of November; at all events before severe frost is coming on. The soil, which has been taken out of the furrows and heaped up at the sides, is then put in, and the beds are completely levelled. The plants have had time during the summer to establish themselves sufficiently.

Next spring the young shoots will make their appearance above ground, and if every thing has been duly attended to; if strong and healthy plants have been selected, and if, besides, water has been given during a dry season, not a single one ought to fail. Some people begin to cut the strongest shoots in the third year, but a better result will be obtained by leaving them undisturbed till the fourth summer, only giving them every spring, in February or March, a good dressing of cow-dung. Manure is the most essential requisite for growing fine and tender Asparagus. The shoots are cut at sunrise and late in the evening, at a length of not more than 9 inches, cutting them with a long knife under ground as soon as the top of the shoot is lifting the soil. Asparagus will always have the finest taste if eaten immediately after having been gathered, but ought never to be kept longer than one day, and should be covered meanwhile with light earth, sand, or some other material of this description. It is a very bad practice, lately in use with our market-gardeners, to immerge the Asparagus immediately after cutting in a tub with water, leaving it in the water till they bring it to market. By this practice the finer flavor is altogether lost, and the cooks should be warned against doing the same.

Wherever manure is not a very expensive article, the culture of the Asparagus pays well, since the lightest and most sandy land, where nothing else can be grown with advantage, can easily be adapted to its culture, and will yield a rent for a long series of years. Besides, the same lands can be made use of for carrots and other vegetables, when the time for cutting is over. Living myself some hundred steps from the Baltic, and having read different accounts of the famous Asparagus culture at the sea coast, near San Sebastian, in Spain, I have last year made the experiment to grow it in pure sea sand containing no humus or vegetable matter whatever. It

only received a moderate supply of manure, and has even not been watered during the last hot summer; nevertheless, it is growing this year so well, that I might have cut a tolerable quantity of shoots as big as a lady's finger, if I would be foolish enough to do so.

The price of Asparagus with us varies from four to seven or eight schillings, or English pence, per pound, the former being the general price from the moment the weather begins to become warm. Many thousand pounds are sent by the steamers to Sweden and other foreign countries, since the Lubeck Asparagus is well renowned. Though I never had the advantage of seeing your fine country, and therefore cannot be a judge of your green Asparagus, I have several times eaten green Asparagus in Italy and France, but I dare confess merely for want of better. However, there is no quarrelling as to matters of taste. As far as regards tenderness, I am at a loss to understand how Asparagus can improve by being exposed to the drying influence of air, wind, and sunshine. It may become more aromatic, though I doubt it, but it will certainly require a greater exertion in being masticated.

Some persons assert that another kind of Asparagus is cultivated in some parts of the south of Germany, which always appears green on the table, though white shoots are equally eaten. I have hitherto not been able to procure any authentic information about its existence, and am inclined to think that only the manner of culture will produce the difference. An English Giant Asparagus has lately been offered by some nurserymen, likewise hitherto not cultivated by myself. Different sorts may require a different treatment.

The season for Asparagus is at present on the decline. However I have requested a friend at Lubeck to send you with this letter, a sample of our market Asparagus, grown and sold in the common way, and I beg you to give it a fair trial, not overlooking that it will have been cut almost a week when arriving with you.—*Heinr. Behrens, Proprietor of the Sea Bath, Travemunde, near Lubeck, June 7.*

[We are much indebted to our kind correspondent for this communication and the Asparagus, which was excellent in quality, and weighed 6 lbs. per 100 without waste. We shall advert to it shortly.]—*[Gard. Chron.]*

DOMESTIC NOTICES.

A PICTURE OF THE WEST.—*Dear Sir:* I have been looking over the first eight numbers of your journal, lately received from Albany in one package; and be assured, this is one of the *best treats* enjoyed during a residence of eleven years upon the prairies. While perusing the pages of this beautiful work, I no longer feel myself an isolated being, far out upon the borders of the cultivated portions of our land, but in the midst of highly gifted and refined minds, sensibly alive to the best interests of

our common country. It has been my lot, from childhood, to live upon the frontier, removed in a measure from the refinements in horticulture which result from a combination of wealth, intelligence, and a well regulated taste. Still, I claim kindred with all who love this pursuit; and, although I may be regarded as a "poor relation," none will, I trust, disown me on that account.

A number of your correspondents have set up claims to their own particular locality, as among

the most favorite spots for the production of good fruit. This was to be expected.

"Such is the patriot's boast, where'er we roam,
His first, best country, ever is at home."

My purpose, however, is not to find fault with the pretensions of others, but to put in a very modest claim in behalf of the valley of the Illinois, as a fruit growing region. Not, perhaps, equal to the classic Hudson or the shores of Erie, but as having some claims to attention. You may not be aware that the Illinois river is the *centre of the great Western basin*. Although she is now the humble tributary of the Mississippi, there is no doubt of the fact that she once enjoyed the honor of conveying the waters of the great northern lakes to the ocean. The waters of the northern lakes, which were for a long period discharged through the Illinois, have cut out a deeper and wider valley than either the Mississippi or Missouri, where those rivers pass through the same geological structure. It is true they all come together on the same level near St. Louis; but from this point upwards, the Mississippi and Missouri are rapid streams, whereas the Illinois for two hundred and fifty miles from its mouth is almost as near a level as the Hudson from New-York to Albany. To illustrate more plainly what I mean, it may be remarked that the waters of the Illinois at Henepin are at least one hundred feet lower than those of the Mississippi at the mouth of Rock river, which is nearly opposite. This deep cut of the Illinois, which never could have taken place without the aid of the waters of the great lakes, has disclosed and made accessible one of the largest and best coal fields in the world. Besides, it gives the country upon its borders a more thorough drainage than is generally found in the west.

The table lands of this region, which are generally about two hundred and fifty feet higher than the river, and comprise at least three-fourths of the whole country, are more exempt from late spring frosts than any other district with which I am acquainted. There has not been, during the last *eleven years*, a late spring frost hard enough to injure the apple or the peach upon our high lands. In the valleys we frequently suffer from this cause, as they do every where else, except in the vicinity of large bodies of water. But in the high open prairies the winds come in contact with the surface of the ground and keep back vegetation until the whole atmosphere becomes warm—after which, we seldom or never have frost in the spring. The buds of the grape vine, which are as tender as any other vegetable, have never been injured in the least upon our high lands during the last eleven years. And our cultivated vines, since they commenced bearing five years ago, have annually matured their fruit. Can our friends on the south shore of Lake Erie or on the Hudson say as much?

The growth of trees upon our rich, dry, warm soil, exceeds anything of the kind to be found elsewhere, and the wonder is that the winter does not kill them. The cool, searching winds of autumn, however, seem to ripen the young wood so well, that we seldom suffer by what you have very appropriately termed the "frozen sap blight." I have seen a few cases of this disease, and have al-

ways believed that the first freeze of autumn did all the mischief. At least it has never occurred with us, except in those seasons, (1842-3 and 1845-6,) when the change from a high to a low temperature was very sudden. We could hardly say that we had an autumn in 1842—for summer continued until winter commenced. Tender varieties of the apple are sometimes injured by the bursting of the bark near the ground upon the first autumnal frost. But these disorders only occur where over-generous cultivation is practiced, and in the main our fruit trees are thus far remarkably healthy. The peach, however, is quite uncertain in its bearing where the trees flourish well—not from spring frosts, but from the too great development of the fruit buds in autumn. If the germs of the peach remain alive until mid-winter, we are sure of a crop.

This part of the country has not been settled long enough to produce much fruit, but it would be hard to find a district where a greater number of beautiful young orchards could be seen than in Peoria county. With a few exceptions, our orchards are all grafted fruit of the first quality; and it has been admitted by all who have had an opportunity of making the comparison, that in size, beauty and flavor, our fruits far exceed anything of the kind to be found "down east." We, therefore, look forward with confidence to the period, not distant, when all will acknowledge that we have the *best fruit district in the United States*. Yours, truly, *Edson Harkness. Fruit Farm, Peoria Co., Ill.*

[It is one of the best proofs of the great general fertility and adaptation of our country to horticultural pursuits, this hearty championship for each favorite locality which our correspondents (not to mention ourselves) exhibit in their articles from so many different points of the compass. We sincerely hope to see these natural advantages, great as they are, all thoroughly put to the trial by the most skilful and scientific cultivation.—Ed.]

.....
NEW SEEDLING CHERRY.—*Dear Sir:* Accompanying this note I forward to you a few cherries, part of the produce of a tree, the seed of which I planted seven years since. I have concluded to call it *Wendell's Mottled Bigarreau Cherry*—it being of true Bigarreau character and beautifully mottled—as you will perceive. The stones which I planted were from the fruit of the large white Bigarreau grown in a garden of this city, which has a collection of the finer cherries in it. The tree is of upright growth, quite thrifty, and an early bearer, as this is the third season it has fruited; the first year it bore three cherries, last year about half a dozen, and this year it has borne about a quart. I also send you a branch of the tree, with the foliage. The fruit was exhibited at the first exhibition of our new Horticultural Society—the Albany and Rensselaer—on the 3d inst. At the same exhibition I also presented another seedling cherry of my own raising, of Bigarreau character, and very fine flavor, but of size and appearance, inferior to the one I send you; I call it the *Carnation Bigarreau*, as it is of a carnation colour. I have presented specimens of it to Mr. HOWARD, of the Cultivator, who will probably notice it in that journal. Yours, very truly, *Herman Wendell. Albany.*

[This appears to be a valuable fruit on account of its ripening rather later than the other varieties of its class. It is of large size, regular obtuse heart-shaped, dark purplish red, becoming nearly black at full maturity, and mottled with small dark streaks or points. Suture marked with a dark line half way round. Stalk of moderate length, set in a round and regular depression. Flesh firm, crisp, well flavored, and the pits small. Ripens about the season of *Downer's Red*.—Ed.]

ALBANY AND RENNELLAER HORT. SOCIETY.—The first exhibition of this new society, (remarkable for the variety of the products shown,) took place at the Geological Rooms, Albany, on the 3d of July.

Mr. JAMES WILSON received the premium for the best twenty-five hardy roses, and for the best and greatest variety of roses. Mr. Wilson also exhibited a fine collection of Dahlias. The collection of roses shown by Dr. WENDELL, of Albany, and Mr. VAIL, of Troy, were also very fine ones; as well as the large collection of herbaceous and annual flowers shown by Mr. NEWCOMB.

The premium for the largest variety and best cherries, was awarded to Dr. WENDELL. The first premium for strawberries was given to Mr. JAS. WILSON, for specimens of the *Swainstone Seedling* shown by him, which were considered by the committee, as finer flavored, though not so large, as those of Hovey's seedling, shown by different members. Mr. PRENTICE, of Albany, exhibited the finest collection of vegetables.

THE GENESEE VALLEY HORT. SOCIETY.—The report of this society, June exhibition, held at Rochester, on the 23d of that month, indicates a fine show. About one hundred and fifty varieties of the finest roses were exhibited, with names, including many of the best Hybrid perpetuals, Moss, Hybrid Chinas, etc. A charming emulation among the lady members of the society, appears to have filled the tables with a great profusion of the choicest flowers, both exotic and indigenous. We noticed with pleasure, that one lady, Miss ROGERS, presented sixty-six species of native plants in bloom.

UTICA HORTICULTURAL SOCIETY.—The exhibition of the 29th of June, was an excellent one. The strawberries shown were unusually fine, and among the varieties that attracted most attention, were *Hovey's Seedling*, *Black Prince*, *Swainstone's Seedling*, *Bishop's Orange*, *Baynes' Extra Early*, *White Pine*, etc. Among these, some berries of *Hovey's Seedling*, shown by Mr. WM. WALCOTT, were the largest, measuring four and three-quarter inches in circumference. This gentleman also exhibited very large and fine specimens of *Black Prince* and *Swainstone's Seedling* strawberries. The show of roses was large and fine. The largest contributors being Mr. CHILDS, who showed seventy sorts, Mr. BOYCE sixty-one sorts, and Mr. WM. TRACY forty sorts, Mrs. PERKINS, Mr. HASTINGS and Mr. WILLIAMS, also exhibited very large and beautiful collections.

THE ROSE BUGS AND A PHILOSOPHER.—One of my very good neighbors, and one of the best informed men of my acquaintance, this summer undertook

to "fight the rose bugs," a hopeless task you'll say, but nevertheless rendered important by their extraordinary ravages; they have been more numerous in the vicinity of Philadelphia this year than we have ever known them. But my philosophical neighbor was for once foiled. His operations were in this wise. His man Pompey and himself rose early to enjoy a savage pleasure in conquering their hitherto invincible enemy; Pomp rolled up his sleeves for slaughter, while my friend pulled on a pair of gloves. To it they both went, and in an hour or two, ere the tuneful breakfast bell had called neighbor W. to his matutinal repast, a bucket full of these *coleoptera* had been bagged. "Now," says Pomp, "massa, 'spose I scald 'em." "Oh, no," says Philosophy; "I'll teach them to trespass on my manor, the varmint!" So he went to his laboratory and brought out some ounces of chloride of lime, which dissolved, was poured over the active mass; they were then buried, and Pomp spanked his spade over the *grave*, as a thing done. Philosophy slept well that night, and in the morning was horrified to find all his enemies airing their wings in the sun, having had a resurrection, which astonished my friend, but did not Pomp, who still thinks scalding water would have been better. Yours. *Jean Jacques. Philadelphia, July 15th, 1847.*

BURR'S SEEDLING STRAWBERRIES.—We have the most flattering accounts of the new Ohio strawberries, raised by Mr. BURR, of Columbus, O. We give, therefore, the following report regarding them, from the Columbus Hort. Society. The fruit committee of the Cincinnati society have also reported in detail upon these new sorts, which they have pronounced "remarkably fine." As we understand Mr. BURR is able to supply plants of the different sorts, we trust our cultivators will give them a trial in New-England and the Middle States.—Ed.

Report on Burr's Seedling Strawberries, by the committee of the Columbus Horticultural Society.—The committee having visited Mr. Burr's garden, at several times during the blossoming and fruiting of his Strawberries, take pleasure in stating to the public, that their observations the present season, have fully confirmed the high opinion expressed by this society the past year, respecting the character of Burr's Seedling strawberries; and as most of the old standard varieties were exhibited by Mr. Burr, growing side by side with these, the committee had full opportunity for comparing them; and they do not hesitate to declare that in their opinion, several of his seedlings are superior in all respects to any other varieties in cultivation—at least for the climate and soil of this region.

The following named varieties are deemed worthy of particular commendation. Several of them were noticed in the report of last year, and have fully maintained the high character then awarded them:

1. *Ohio Mammoth*.—Fruit very large, averaging larger size than any other strawberries known; shape rather long, conical and somewhat angular; colour light red, flavor sweet and excellent; foliage large and plants vigorous, hardy, and productive; flowers perfect, or staminate. Produced from Burr's old Seedling and Hovey's.

2. *New Pine*.—Fruit large, colour pale red, flavor highly aromatic, sweet and delicious, very early and uncommonly productive; plants vigorous and perfectly hardy; flowers pistillate—believed to be the best strawberry cultivated.—From Burr's and Hovey's.

3. *Rival Hudson*.—Fruit of a dark and shining red colour, resembling the Hudson of Cincinnati, except that the fruit and stem are longer; flavor very rich and excellent; plants hardy and very productive—a very handsome and excellent variety for market, or domestic use—flowers pistillate. Produced by the old Hudson and Burr's.

4. *Columbus*.—Fruit large, nearly round, of a beautiful dark colour and rich sweet flavor; plants uncommonly prolific and quite hardy—flowers pistillate.—From Hovey's and Burr's.

5. *Scioto*.—Fruit of large size, colour light scarlet, flavor rich, sweet and delicious; plants very productive, vigorous and hardy—pistillate.

6. *Scarlet Melting*.—Fruit rather long, with a neck, colour bright red or scarlet, flavor excellent, flesh very tender, (melting readily in a dish with sugar,) consequently not suitable for transporting to market, though delicious for the table; plants very productive, of rapid and vigorous growth and hardy—pistillate.

7. *Profusion*.—Fruit medium size or small, flavor rich and sweet; plants hardy and a prodigious bearer—200 perfect berries having been counted on a single plant—pistillate.

8. *Lute Prolific*.—Fruit of good size, largest berries measuring over three inches—flavor rich and excellent. A very valuable variety, owing to its lateness of ripening—being full ten days later than most other varieties—and its great productiveness—35 quarts of the berries were picked from a bed six feet by twenty; which is equal to two and a quarter bushels to the rod—plants uncommonly vigorous and hardy—pistillate.

9. *Burr's old Seedling*, (staminate,) maintains its high reputation, in this region, for productiveness and excellent flavor—and is found to be the best variety for planting contiguous to the pistillate varieties to ensure their productiveness.

B. LATHAM,
M. B. BATEHAM,
S. MEDARY,
JOHN MILLER, } Committee.
[Ohio Cultivator.]

PRIZES FOR NEW FRUITS.—The Cincinnati Horticultural Society, at the suggestion of N. LONGWORTH, Esq., have offered two prizes of \$100 each, for a new American seedling raspberry and strawberry, which, after thorough trial, shall prove superior to any now in cultivation. Mr. L. offers to pay one half of the premiums.

DUBOIS' EARLY GOLDEN APRICOT.—This is a seedling variety, originated by our neighbor, Mr. CHARLES DUBOIS, of Fishkill Landing, N. Y. It has attracted our attention for two or three years past, and as it appears well worthy of something more than a local reputation, we have procured specimens from the original tree, and now publish a correct description of this new variety.

Though this apricot is of small size, and simply good flavor, it has two qualities which will, we think, render it popular among fruit cultivators. The first is its great productiveness in all seasons; and the second, its comparative exemption to the attack of the curculio.

We may give a pretty correct idea of the productiveness of the *Early Golden Apricot* by saying that the crop of fruit borne by the original tree (which is growing in common loamy soil without preparation) has been sold in the New-York market for the last three years at prices varying from \$4 to \$16 per bushel. In 1844 the crop of this tree brought \$45; in 1845, \$50, and last year it was sold for \$90. The fruit is very fair in appearance, and bears carriage to market well.

Mr. DUBOIS, who is a pretty extensive orchardist, finds that in seasons when the fruit of the *Moorpark*, one of the best and surest sorts, nearly all drops before maturity, stung by the curculio—that of the *Early Golden* hangs in rich clusters on every limb. With him, indeed, this sort, among the apricots, appears to be avoided by this insect, in the same way that the common *Damson* does among plums—probably from the thickness or some other peculiarity of the skin.

We can not but think, therefore, that in all parts of the country where the sorts of apricots already in cultivation fail because stung by the curculio, this variety will be likely to give abundant crops. The tree, probably from being a native seedling, is also more thrifty and hardy than most other sorts.

Mr. DUBOIS has propagated quite a stock of young trees, and will, in the autumn, supply orders at a very moderate price.

Dubois' Early Golden Apricot.—Fruit small, about 1½ inch in diameter, roundish-oval, with the suture narrow but well marked, but extends only half way round. Skin smooth, uniform pale orange. Flesh orange, moderately juicy and sweet, with a very good flavor, separates from the stone. The latter is oval, very little compressed, kernel sweet. Ripens from the 10th to the 15th of July, ten days before the *Moorpark*.

.....

ROSE-SLUGS.—Dear sir—My garden has been terribly infested, this season, with a small green insect, a species of slug, about half an inch long, and very slender, which fixes itself on the under side of rose leaves and eats up all the foliage, so that at last the mere skeleton of the leaf which remains looks quite brown and seared. Can you give your readers any remedy for this depredator? Your friend. *A Constant Reader*.

[Yes, it is by no means difficult to destroy the rose-slug. Take either strong soap-suds or tobacco-water; we prefer the latter, which should be of a light brown colour; as soon as the slugs make their appearance on your rose-bushes, take a large syringe and shower the whole plant, being particularly careful to throw it on the under sides of the leaves. This will kill the whole brood on any one bush, almost immediately—and the next morning you can wash off the leaves with some clean water from the rose of a watering-pot. If this is pursued with all your rose bushes, as soon as the slug makes his appearance on them, you will easily

get rid of it. If allowed to run his course and deposit his eggs, you will probably have an increased number the next season, that will perhaps devour every rose-leaf in the garden.—Ed.]

.....
QUERIES ON SEA-COAST CULTURE.—Dear sir—The preparation of several of the valuable articles of the *Horticulturist*, appears to have been suggested to you by particular inquiries of correspondents. I therefore presume to ask if the culture of the quince is not of sufficient general interest to make a subject worthy of a little space in your columns?

In the island of Rhode-Island, quinces are planted closely, in the most exposed situations, for screens against the salt-air; and in this way they are said to yield very good crops of fine fruit. On the coast generally an exposure to the sea is thought to be an advantage, I believe, and it is usual to select low, damp situations near the shore, as the best place for this fruit. Some think they do better if the sod is not broken over the roots. You state in the "*Fruits of America*," and also in a late number of the *Horticulturist*, that the common practice is erroneous. Do you condemn the choice of low or damp ground, or wish simply to inculcate the necessity of liberal attention, manuring and cultivation? [Especially the latter.—Ed.]

It is said that apple orchards do not succeed on the sea shore, and that fruit trees generally do not thrive. I think this is not always the case, however, and as I intend to set an orchard, next autumn, on a hill contiguous and exposed to the sea, I should be glad to get any information or advice about it, and I think it would be valued by many of your subscribers on the coast. Are not some varieties, (the Roxbury Russet for one,) better adapted to the sea shore than others? [The Roxbury Russet, Baldwin, Yellow Bellefleur and R. I. Greening are best adapted to the sea shore.—Ed.] What shade and ornamental trees and shrubs are best suited to grounds subject to the influence of the sea? I have seen the leaves of trees and of weeds shrivelled and black as if frost bitten, after being wet with spray in a gale. Salt-manure, (sea-weed, &c.) has been found an injurious application to apple trees, at a distance from the shore. With much respect, your obt' serv't. *F. L. Olmsted. Sachem's Head, Guilford, Ct., June 29th, 1847.*

[We refer our correspondent to the article on the culture of the quince, in this number, and also to the notice in the leader, on Mr. Tudor's successful mode of protecting all kinds of trees and plants against the injurious effects of sea winds.—Ed.]

.....
THE PEAR-TREE BLIGHT AT THE WEST.—If my observations are correct, I have witnessed the following facts, touching blight:

1. Seedling pear trees die of blight the first summer, precluding the idea that freezing could be the cause, nor had I ever seen any thing like insect blight on my premises.

2. A pear tree budded, and started soon after, the same season, usually dies with all the appearance of blight—making, as I suppose, a clear case of frozen sap blight, as frost overtakes the tree in the midst of its growth.

3. A pear tree, very thrifty and vigorous, if

barked in the least by a single tree, in the last half of the season of its growth, frequently dies with leaves on, and just as if blighted.

4. I have seen blight pass in a streak through an orchard, and for which I could account only by supposing it had been caused by a cold current of air, or by insects brought in by a current of air, but no insects could be discovered.

5. The most frequent cause of blight seems to me to be warm wet weather, succeeded by very dry weather.

To these I may add:

6. Our friend, D. THOMAS, observed much blight to follow a severe frost in the spring of 1845.

From all which, as heretofore, I hold blight may proceed from different injuries, when the sap of the tree is in a particular condition, and that condition I believe to be a kind of plethora, or overfullness. In the human system, a small injury, it is said, may produce lock-jaw; and interruptions in the circulation of the blood frequently produce sudden death.

As remedies for blight, Rev. C. Springer proposes thin land: yourself mounds and root pruning. I believe a well drained soil, never deficient in moisture, such as is frequently afforded by river banks, will be likely to succeed. Yours. *Eli Nichol. Walhaling, O., July 3d, 1847.*

.....
VARIATION IN THE PEACH TREE.—In the garden of Mr. Willis in this city, is a tree, which he planted as a peach tree, and which actually bore peaches last summer, now full of nectarines. There is no perceptible difference between this tree and the peach trees on each side of it, which are well filled with their natural fruit.

Downing, in his "*Fruits and Fruit Trees*," says the nectarine "appears to be only a distinct accidental variety of the peach, and this is rendered quite certain, since there are several well known examples on record of both peaches and nectarines having been produced on the same branch. The Boston nectarine originated from a peach stone."

The Boston nectarine, to which reference is made above, is cultivated in the garden of Samuel G. Perkins, Esq., of Brookline, and its origin is thus described by him: "This fruit I obtained from Mr. T. Lewis, of Boston, in whose yard it was produced from the kernel of a peach stone, as he and his mother both informed me; they, at the time it first bore fruit, never having seen a nectarine. Mr. Lewis, as the tree came forward, always supposed it would produce what is called a peach; but on seeing, when it first appeared, this beautiful fruit, with a smooth skin, was impatient to know what it was, and carried it to the late Mr. S. Pomeroy, who was then the leading cultivator of fruits in this region. Mr. Pomeroy brought it to me, for although he knew it to be a nectarine, he had never seen any so large, and as I had the Red Roman in perfection, he wished to compare it.

"I immediately obtained buds from the tree for Mr. Pomeroy and Mr. Preble, as well as myself. All these failed, mine alone being preserved. The original tree from which they were taken, was unfortunately soon after destroyed.

"With regard to the original tree found in Mr.

Lewis' yard, I have no doubt that it was really the product of a peach stone; for we all know very well that such instances are on record, and that a nectarine is nothing more than a *smooth skinned* peach; the stone of a downy peach may produce occasionally a peach without down."

There was no perceptible difference between the blossoms of the tree in Mr. Willis' garden, and the peach trees by the side of it; and there was no suspicion that it was other than a common peach tree, until the fruit began to form. The fruit is now as large as a ripe damson and of a similar shape; skin pale green, with a deep violet red cheek—and resembling the Downton Nectarine.—*Portland Advertiser*.

[We recommend the foregoing to the attention of our incredulous Cincinnati friend.—Ed.]

.....
VARIATION IN STRAWBERRY BLOSSOMS.—With my limited experience in the culture of strawberries, I shall not venture to take any part in discussing the strawberry question. But as that has happened to me which I have not seen noticed, so far as I recollect, by any writer, I will just state the fact, which, should you think it worth the while, you may contrive to verify another season.

I had this spring some Hovey's seedlings (received from S. WALKER, Boston,) which came out in a feeble state. The first trusses of flowers thrown out by them were *decidedly staminate*, more so than those of the Early Scarlet. I had some seedlings near by that were as *decidedly pistillate* as I ever saw a Hovey, but produced full trusses of perfect berries, and must, therefore, according to the theory, have been fructified by the Hoveys. Afterwards, when the Hoveys became stronger, some of them threw out trusses of *decidedly pistillate* blossoms—that is, some of the identical plants that at first produced *staminate* ones.

I think there can be no mistake about these facts, for my surprise at the appearance of the strongly staminate blossoms, led me to watch the plants critically. Very respectfully yours. E. C. Tracy. Windsor, Vt. July 6th, 1847.

.....
GINSENG—*Panax quinquefolium*.—As this root commands a very high price, in China, where it formerly (before American innovation) sold for its weight in gold, it can without doubt be made a very profitable article to American commerce in our increasing intercourse with that mighty empire. The roots, in their wild state, are usually small, but by cultivation they may be increased to three or four times the ordinary size. The plant will flourish in almost any ordinary soil, and exacts only the simplest culture.

As the Chinese are so fastidious, and at the same time so limited in their wants, in consequence of the immense fertility and unceasing industry of its intelligent population, we have as yet been enabled to furnish them with but few articles that are in great request by them, and it is, therefore, highly important that we should enlarge the quantities of such as they actually desire, as a means of commanding the balance of trade, and thereby lessen the drain of specie or of its equivalent. Wm. R. Prince. Flushing, July 12, 1847.

NOTES ON STRAWBERRIES.—The *Black Prince* strawberry succeeds admirably here. The fruit, in my estimation, is superior to Hovey's seedling. It is very highly esteemed by others who have seen it. The vines are very hardy and productive, and the berries are so beautiful as to render the variety very desirable to cultivate for the market.

Stoddard's Seedling has much disappointed us. It turns out to be the Alpine. Many cultivators have also been much disappointed in Hovey's seedling. Numerous beds were set out last season, with expectations of large crops. Nine-tenths of the plants were unproductive. Mr. COMSTOCK, of this place, procured his plants direct from HOVEY, most of which were *staminate*. Col. WILDER examined a bed of them in the garden of STEPHEN H. SMITH, and gave the opinion that the staminate plants were not Hovey's seedling. When a bed first came in blossom, I examined some of these plants in my own garden, and found a difference in the shape of the leaves, between the staminate and pistillates. The leaves of the latter were rounder, and upon the under side of different shade of green; afterwards the difference became less perceptible. Yours, &c. L. C. Eaton. Providence, R. I., July 8, 1847.

.....
PRESERVING SCARLET GERANIUMS.—Nothing is more showy in the flower gardens during the whole summer and autumn, than beds or masses of the large scarlet blooming geraniums, of which the Old Horse-Shoe Geranium is the original type—and such of the new sorts as *Tom Thumb*, etc., the latest and most brilliant edition. As there are, however, many who would be glad to cultivate them who have no greenhouse in which to keep the roots, I will mention, for the benefit of such, a very simple method which I pursue with excellent success.

As soon as the October frosts have touched the foliage, I dig up my scarlet geranium plants, and set the roots on the floor of my cellar. Here they remain for a week or two. I then *hang them up*, wherever it is convenient, in the cellar, either the dry roots or with the little ball of earth which may have adhered to them. Here they remain (the cellar not admitting frost) quite sound and dormant till spring, when my beds are again ready for them. So far from injuring them, I think they bloom rather finer after a winter of complete *rest*, than when they have been kept in the greenhouse. X. Y. Z. Boston, July, 1847.

.....
ROSE-BUGS.—This insect is more troublesome to us than any other, or I may say than all others put together. In fact, so great have been its numbers all the past month, that if we are to have the like many seasons, I shall feel like giving up my garden to them and "backing out," leaving the little rascals in full possession. This year they are not content, so numberless are they, with devouring all my roses: I might be willing enough to compound for this mischief. But they have literally eaten up all my cherries, and then have devoured, or cut off from the trees, the greater part of all my young half grown apricots and nectarines. I find that the lighter the soil, (mine is very sandy,) the more do the rose-bugs abound. In gardens on

loamy or clayey soils they are but little known. Is there no relief? Very truly. *A Jerseyman. July 5th, 1847.*

[The rose-bug is more numerous in gardens where the soil is sandy, because the insect has its winter quarters in the ground, and the lighter and warmer the soil the greater the certainty of every one coming out alive when the summer commences.

This is one of the most difficult of all insects to subdue, when it is much multiplied—since it defies tobacco-water, smoke, salt, and all that either drives away or destroys most other insects. Indeed, nothing but *hot water* or *fire* seems to put an end to it. Hand-picking and burning them up is the best and surest remedy, when they are not numerous, and are confined, for example, to a few flowering plants—roses and the like. But this is out of the question when they take entire possession of large trees, etc., as noticed by "*A Jerseyman.*" Since the young rose-bugs pass the winter in the ground, perhaps below the reach of frost, in the shape of grubs, and rise to the surface in a pupa state, early in June, it appears to us that they may, where they exist in great numbers, perhaps, be more successfully attacked just before they emerge from the earth, than afterwards. They must then be in a more tender state than when in the full

grown stage, with wings. As they nearly all rise to the surface of the ground and emerge about the same time—viz. that of the opening of the damask rose, we would suggest the application to the soil, under all the trees or bushes where they were most abundant the year previously, of *boiling water*. This, if poured on the ground just at the right time, would, we suppose, be likely to kill myriads of them at once, and the proper moment might be ascertained by noticing the very first appearance of the insect, and examining the soil at the same time.—Ed.]

RAPID GROWING TREES.—I am anxious to plant a considerable belt of trees, both for effect and shelter. I wish to select those of the quickest growth—but I wish to avoid such as, though of rapid growth, have the troublesome habit of throwing up suckers—like the *Ailanthus* and *Silver Abele*. Will you please to assist me, by a word or two of advice in your journal? Respectfully. *J. Smith. Philadelphia.* [We recommend the Silver Maple (*Acer dasycarpum*), the Cork Elm (*Ulmus tuberosa*), the Ash-leaved Maple (*Negundo fraxinifolia*), and the Weeping Elm (*Ulmus americana*.) These make both wood and thick masses of foliage very rapidly, and are among the most ornamental of all rapid-growing trees.—Ed.]

MASSACHUSETTS HORTICULTURAL SOCIETY.

Exhibition of Saturday, June 12, 1847.

FLOWERS.—From M. P. WILDER, President of the Society, fine new hardy Ghent Azaleas, including Buckinghamii, dianthiflora, regina, etc.; white Camellias; Brugsmansia Knightii, formerly Datura; Calceolarias, Petunias, Spiraeas, Tree Pæonies, Lilacs, Cinerarias, Roses, and cut flowers in variety, embracing many beautiful specimens.

From *Captain Sweetlin*, of the ship Augustine Heard, from Valparaiso, by Capt. F. W. Macondray, a Cactus from the Araucaria mountains in Chili. This was a noble specimen of this tribe of plants, measuring nearly five feet in circumference, and very formidable from the immense number of its thorns. From its form, and for want of the proper name, the Committee christened it the *Ottoman*.

From *J. E. Teschemacher*, a plant of *Ismene calathina*, or white Peruvian Wedding flower, very fragrant; plants of *Echinocactus ottonis* and *E. mammillarioides*, a seedling from Vera Cruz, (curious); also a fine plant of *E. Eyriesii*, with three blooms of its elegant, long tubular white flowers, and nine buds.

From *Joseph Breck & Co.*, twelve species of *Iris*: *amœna*, *variegata*, *florentina*, *germanica*, *pallida*, *siberica*, *flavescens*, *squalens*, etc., including *susiana*, one of the most beautiful and admired of this tribe; *Pæonia arborea*, *Banksii*, *sibirica*, *paradoxa*, *officinalis*, varieties of *rosea* and *albicans*; *Lupinus polyphyllus*, blue and white; *Hyacinthus plumosus*, *Aquilegias* in variety, *Pansies*, *Lychnis*, *Hesperis*, *Sophoras*, etc.

From *Augustus Aspinwall*, *Roses* in great variety.

From *T. H. Perkins*, by W. Quant, five plants of *Pelargoniums*, and two *Vinca herbacea*, var. *purpurea* and *alba*.

From *James Nugent*, *Asclepias cinerea*, three *Calceolarias*, *Erica ventricosa superba*, and a fine *campanula*, also cut flowers.

From *Wm. Mollar*, three bouquets, *Pelargoniums* in variety, *Pæonies*, *Roses*, *Amaryllis*, *Iris*, and other cut flowers.

From *O. H. Mather*, a great variety of cut flowers, including *Roses*, *Pelargoniums*, *Phlox drummondii*, *Cacti*, *Cinerarias*, *Abutilon*, *Stocks*, *Verbenas*, &c.

From *Mr. Bradford*, a bouquet composed of indigenous flowers.

From *Samuel Walker*, fine *Ranunculus* in great variety, but past their perfection; *Pæonias* and *Iris* in variety; Haw-

thorn, double white and scarlet, grand flowering and other varieties; *Aquilegias*, *Lychnis*, *Hemerocallis*, *Hyacinthus plumosus*, *Pansies*, fine specimens of *Dictamnus fraxinella*, var. *alba* and other cut flowers.

From *E. M. Richards*, six varieties of *Iris*, *Lupinus polyphyllus*, *Sophora*.

From *J. L. F. Warren*, *Pæonia arborea banksii*, *P. globosa* *Cassoretti*, *papaveracea*, *Beccolinii*, *rubra plena*, and other varieties; a fine display of *Rhododendrons*, *Lupinus polyphyllus*, *Phlox drummondii*, var. *alba*; five flat hand bouquets and four round ditto.

From *J. L. Gardner*, by J. Thomas, one large pyramidal bouquet, and one large design.

From *Parker Barnes*, one fine plant of *Petunia Hebe*, *Boronia viminea*, and *Alsiraemia pegrina*.

From *William Kenrick*, by Miss Russell, one large bouquet, *Pæonias* in var., *Purple Beech*, *Laburnum*, *Snowballs*, and other cut flowers.

From *Messrs. Winship*, a fine collection of plants, occupying one circular stand, including a fine show of Azaleas, Hawthorns, Spiraeas, *Iris*, *Chionanthus virginicus*, *Calycanthus floridus*, *Mespilus prostratus*, *Loniceras*, *Pæonias*, etc.; and also two flat bouquets.

From *John Hovey*, two flat bouquets and a variety of cut flowers.

From *Hovey & Co.*, six hand, and two circular table bouquets; also nine varieties of beautiful Azaleas.

AWARD OF PREMIUMS.

ON POT PLANTS.—Alex Mc Lennan, E. Augustus Story, and J. Breck, judges.

First premium for best six plants, to *Wm. Quant*, \$2; second ditto to *A. Bowditch*, \$1.

ON HARDY AZALEAS, HAWTHORNS, &c.—H. W. Dutton, Wm. Quant, and R. M. Copeland, judges.

For the best display of hardy Azaleas, first premium to the Messrs. *Winship*, \$3.

For the second best display, the second premium to Messrs. *Hovey & Co.*, \$2.

For the best display of Hawthorns, first premium to the Messrs. *Winship*, \$3.

For the second best ditto, to *S. Walker*, \$2.

For the best design, a moss vase, (dissimilar to former ones

shown.) with flowers, to *J. L. Gardner*, by *J. Thomas*, a premium of \$2.

For the second best design, to *Miss Russell*, \$1.

For a vase bouquet, to *J. Thomas*, a premium of \$2.

For the best table and mantel bouquet, to *Messrs. Hovey & Co.*, \$2.

For the second best do. do., to *Messrs. Winship*, \$1.

For the best six hand bouquets, to *Azell Bowditch*, \$2.

For the second best six do., to *Messrs. Hovey & Co.*, \$1.

GRATUITIES.

The Flower Committee award the following gratuities, viz. To *Samuel Walker*, for a display of Ranunculus, \$3.

To *J. L. L. F. Warren*, for six hand bouquets, \$1. For this and a previous display of Rhododendrons, \$3.

To *J. E. Teschemacher*, for a plant of *Ismene calathina*, and plants of *Echinocactus*, spec. *Otonis*, mammillarioides, (a seedling,) and *Eyriesii*, \$3.

FRUITS.—Mr. *Allen*, of Salem, presented six varieties of Grapes, full ripe; also Figs and Mayduke cherries.

VEGETABLES.—From *O. H. Mather*, by *Thomas Needham*, string beans and a brace of Cucumbers.

From *A. D. Williams*, Lettuce, Rhubarb, and a brace of Cucumbers.

From *A. Robertson*, New-Bedford, by *Wm. Brims*, Rhubarb.

From *J. L. L. F. Warren*, by *John Cadness*, Giant and Victoria Rhubarb.

Saturday, June 19, 1847.

FLOWERS.—From *M. P. Wilder*, President of the Society, fine plants of *Fuchsia*, viz. *Empress*, a fine new variety, with bluish white sepals, and purplish pink corolla, large flower, one of the best varieties; *Lady of the Lake*, bluish sepals, crimson corolla, fine; *Vesta*, flesh-colored sepals, crimson and scarlet corolla; also *Venus Vitrix* and *Frostii*; two *Calceolarias*, new spotted seedlings; *Gladiolus Colvillei*; also, *Pæonias*, *Whitelei*, *Humei*, and *Richardsonii*.

From *J. L. L. F. Warren*, *Rhododendrons* in var., *Pæonia officinalis*, *Phlox suaveolens* and maculata, *Philadelphus grandiflorus*, *Plum* ago *Zeylanica*, *Bouvardia triphylla*, *Myosotis arvensis*, *Harrison* and *Scotch* *Roses*, *Papaver orientalis*, *Polemonium*, *Passiflora fragrans*, *Clematis integrifolia*, *Caprifolium Douglasii*, *Daisies*, *Pinks*, etc. Also, eight flat and five hand bouquets.

From *Samuel Walker*, a seedling *Phlox*, from maculata, with larger corolla, and more compact head or panicle, an improvement upon the old variety. A fine specimen of *Lychnis viscaria*, very rare double variety; new crimson *Bourne* *Rose*; *Spiræa filipendula plena*, etc.

From *Augustus Aspinwall*, *Hardy Perpetual* and other *Roses* in great variety.

From *A. Bowditch*, *Roses*, *Pæonia Whitelei*, *Hemerocallis flava*, *Polemonium æruleum*, var. *alba*, *Valeriana Phu* and other cut flowers. Several pot plants, viz. *Five Fuchsias*, one *Russelia juncea* and one *Pelargonium*, also seven hand bouquets.

From *E. M. Richards*, *Lupinus polyphyllus*, *Papaver orientalis*, *Hemerocallis flava*, *Iris* in var.; *Dictamnus fraxinella*, two var., *Pæonies*, *Sarracenia purpurea*, a curious indigenous plant, *Arethusa bulbosa*, a beautiful orchideous native flower, *Loniceras* in var., with other cut flowers in variety.

From *Joseph Breck & Co.*, numerous cut flowers filling seven stands; including a great variety of hardy *Roses*, *Loniceras* in var., *Papaver orientalis*, *Iris* in var., *Dictamnus fraxinella*, two var., *Hemerocallis flava*, *Pæonia Whitelei* and *Pottsi*, *Tridacenta virginica*, var. *alba* and *plena*, *Delphinium Barlowii* and *sinensis*, *Campanula pulchella*, *Spiræa filipendula plena*, *Lupinus polyphyllus* *Bapsia*, two var., *Phlox maculata*, *Pansies*, *Aquilegias*, *Veronica spicata*, *Valerian*, *Lychnis*, etc.

From *William Kenrick*, by *Miss Russell*, one large flat, and one pyramidal bouquet, and cut flowers in var.

From *James Nugent*, a fine show of cut flowers, including *Pelargoniums*, *Roses*, fine specimens of *Gladiolus blaudus*, *Cactus*, *Verbenas*, and other green-house plants in variety.

From *S. R. Johnson*, *Pæonia Whitelei*, fine specimens, and *Acacia rosea*.

From *W. B. Richards*, one large bouquet, and fine specimen of *Rocket Candytuft*.

From *Wm. Mellor*, one large circular, and two small flat bouquets; also cut flowers in variety, including seedling *Pe-*

largoniums, *Iris*, *Pansies*, and seedling scarlet *Trumpet Honeysuckle*, etc.

From *Hovey & Co.*, one pyramidal bouquet, and six hand do. also a plant of *Hydrangea japonica*, a flower of great magnificence and beauty.

From *J. L. Gardner*, by *J. Thomas*, eight pot plants, viz. four *Pelargoniums*, and four *Calceolarias*; also a fine design, or two-sided semi-circular bouquet upon a moss covered stand, one side composed of *Dahlias*, *Roses*, etc., the other of choice green-house plants. Also a moss vase, with a bouquet of indigenous and other flowers.

From *Mr. Crowninshield*, by *John Quant*, eighteen plants of fine *Pelargoniums*.

From *O. H. Mather*, a great variety of cut flowers from the green-house, embracing many fine specimens of *Cactus*, *Calceolarias*, *Cinerarias* and *Pelargoniums*; among the latter was a fine seedling, *Clematis grandiflora*, *Roses*, *Phlox Drummondii*, var. *alba*, a very fine, &c. &c.

From *Messrs. Winship*, a great variety of shrubby and herbaceous flowers, filling the two circular and three side stands, among which was a fine display of hardy *Azaleas*, *Scotch*, *Harrison* and other *Roses*, *Pæonias*, *Spiræas*, *Iris*, *Rose Acacia*, *Loniceras*, etc., etc.; also two large flat bouquets.

AWARD OF PREMIUMS.

The Flower Committee, Messrs. Quant, Richards, and Dutton, judges, award as follows:

For the best six pot plants, first premium to *J. L. Gardner*, by *J. Thomas*, \$2.

For the second best six do., second premium to *Mr. Crowninshield*, by *John Quant*, \$1.

A gratuity to *Messrs. Hovey & Co.*, for a rare specimen of *Hydrangea japonica*, in bloom, \$3.

For the best six hand bouquets, to *Messrs. Hovey & Co.*, \$2. For the second best do. do., to *J. L. L. F. Warren*, \$1.

A gratuity to *Azell Bowditch*, for hand bouquets, \$1.

For a design, a stand with an oval bouquet with two faces or fronts, one composed of green-house flowers, the other of flowers of open culture, a premium to *John Thomas*, of \$2.

For a moss vase filled with 40 varieties of beautiful indigenous and other flowers, a gratuity to *John Thomas*, of \$2.

For the best large bouquet, to *Wm. Mellor*, a premium of \$2.

For the second best do. do., to *W. B. Richards*, \$1.

For a pair of mantel bouquets, a premium to the Messrs. *Winship*, of \$2.

FRUITS.—Peaches fully ripe, viz. *Coolidge's Favorite*, very fine, by *Mr. O. Johnson* of *Lynn*; also specimens by *Mr. Allen* of *Salem*.

Grapes, six varieties by *Mr. Allen*; also, *Hunt's Early Tawny Nectarine*, and *Black Figs*.

Cherries, by *Mr. Allen*, viz. *Mayduke*, *Elton*, fine and *Black Tartarian*.

Lemons, by *Mrs. L. Spaulding* of *South Reading*.

Strawberries by *John Hill*, four boxes of *Early Virginia*.

VEGETABLES.—From *Messrs. Winship*, *Victoria Rhubarb*, twelve stalks, weight 12½ pounds, *Water Cresses*.

From *B. V. French*, *Giant Rhubarb*, six stalks, weight 7 pounds; *Victoria Rhubarb*, twelve stalks, weight 15 pounds.

From *T. H. Perkins*, by *William Quant*, *Victoria Rhubarb*.

From *Hazen Hazeltine*, *Somerville*, by *John Martin*, new Potatoes, first of the season.

Saturday, June 26, 1847.

FLOWERS.—From *M. P. Wilder*, President of the Society, a great variety of Hardy and Green-house *Roses* and cut flowers, not in competition with other amateurs. We noticed among the *Pæonias* some varieties which were quite novel; the central part of one variety (*Duchess de Nemours*) is composed of numerous fine pale yellow petals, with a row of broad bluish white exterior ones. We have heard of a yellow variety of *Pæonia* in Europe, and doubted its existence, but from the appearance of this variety we can no longer doubt. The variety *Sulplurea* has some resemblance to *Whitelei*, but instead of being a pure white, has a sulphur tint; the other new varieties exhibited were *prolifica tricolor*, *triumphans*, *grandiflora carnea*, *plenisima variegata*, and *Hericiartiana*; also the old varieties, *Whitelei*, *Reevesii*, *Pottsi*, *Richardsonii*, *Humei*, and *fragrans*. *Mr. W.* also exhibited plants of the *Gladiolus Wilhelmus*, bright scarlet with white stripe, and *G. Lisette*, with large Orange flower, and pink white stripe, both of them very beautiful. Also fine specimens of *Spiræa aruncus* and *japonica*.

From *Wm. Mellor*, fine double Pinks, Roses, Pelargoniums, etc.; also two bouquets.

From *J. L. Gardner*, by *J. Thomas*, eight pot plants, viz. *Miltonia spectabilis*, a beautiful, rare epiphyte plant, a native of Bengal; *Epidendrum spec.*, a curious orchideous plant from Mexico; three *Pelargoniums*, two *Fuchsias*, and one seedling *Calceolaria*. Also a globe bouquet or design.

From *W. B. Richards*, three bouquets, and specimens of *Iberis coronaria*.

From *O. H. Mather*, a great variety of beautiful greenhouse and hardy plants, including roses, *Verbenas*, *Pelargoniums*, *Cytissus racemosus*, Pinks, Lupins, Stocks, *Alstramaria*, *Salvia patens*, *Phlox Van Houttii* and *Drummondii*, var. *alba*, *Petunia* in variety, &c.

From *Messrs. Winship*, one pair of mantel bouquets, fine specimens of *Virgileia lutea*, a great variety of hardy and other roses, and other cut flowers, in variety, including a fine display of hardy Azaleas, of which these gentlemen have made a beautiful show for four weeks in succession.

From *Wm. Kenrick*, by *Miss Russel*, one large design or bouquet, composed of a great variety of flowers; also a large number of vases filled with fine specimens of *Pæonies* and other flowers.

From *Joseph Breck & Co.*, a great variety of Roses, *Pæonies* and herbaceous plants.

From *E. Wight*, Roses.

From *E. M. Richards*, Roses and other cut flowers in great variety.

From *Augustus Aspinwall*, a beautiful collection of fine Roses.

From *Capt. Macondray*, fine Roses.

From *Samuel Downer, Jr.*, large branches of Boursalt and Hybrid perpetual Roses.

From *J. L. L. F. Warren*, one pyramidal and eight hand bouquets. Also Roses in great variety, *Pæonies* and other cut flowers; six pot plants, viz. two *Fuchsias* paragon, one *Ani gozanthus coccineus*, *Lilium thunbergianum*, one *Sollya heterophylla* and one *Mahernia odorata*.

From *A. Bowditch*, Roses, *Pæonies*, Sweet Williams and other cut flowers. Also, six hand bouquets.

From *S. Walker*, *Pæonies* and herbaceous plants in great variety.

From *Hovey & Co.*, one large flat bouquet or design; two pyramidal do., and six hand do. Also Roses in great variety.

AWARD OF PREMIUMS.

On Roses.—*William Quant*, *J. Thomas* and *S. Walker*, Judges.

Class No. I. *Hardy Roses*.—For the best thirty varieties, to *J. Breck & Co.*, the first premium of \$8.

To *Hovey & Co.*, second do., \$6.

To *J. L. L. F. Warren*, third do., \$4.

To *J. Breck & Co.*, for the best display, \$3.

Class No. II. For the best twelve varieties, to *Messrs. Winship*, the first premium of \$5.

To *A. Bowditch*, second premium of \$3.

Class No. III. *Hardy Perpetuals*.—For the best ten flowers, to *J. Breck & Co.*, first premium of \$5.

To *A. Aspinwall*, second do., \$4.

To *J. Breck & Co.*, best display, \$3.

ON *PÆONIES*, PINKS, POT PLANTS AND BOUQUETS.—*H. W. Dutton*, *E. A. Story*, and *Thomas Needham*, Judges.

Pæonies.—For the best twelve flowers, having regard to the number of varieties, to *Messrs. Breck & Co.*, \$5.

For the second best do. do., to *S. Walker*, \$3.

For the best display, to *Messrs. Breck & Co.*, \$3.

Pinks.—First and second premiums were not awarded, as there were no competitors within the rule.

For the best display, to *Wm. Mellor*, \$2.

A gratuity to *Messrs. Breck & Co.*, for fine specimens, \$2.

Pot Plants.—For the best six pot plants, to *J. L. L. F. Warren*, a premium of \$2.

For the second best do. do., to *J. Thomas*, \$1.

Designs.—For the best, to *Hovey & Co.*, \$2.

For the second best, to *Miss Russell*, \$1.

A gratuity to *J. Thomas*, \$1.

Bouquets.—For the best pair of mantel bouquets, to the *Messrs. Winship*, \$2.

For the best Pyramidal bouquet, the *Messrs. Hovey*, \$2.

For the second best, to *J. L. L. F. Warren*, \$1.

For the best six hand bouquets, to *J. L. L. F. Warren*, \$2.

For the second best do. do., to *Azell Bowditch*, \$1.

The committee award a gratuity of \$5, to *M. P. Wilder*, for fine display of new *Pæonies*.

FRUITS.—On no former occasion did our weekly exhibition present more to admire. If we turn aside for a moment to pay our court and respect to our lovely FLORA, seated upon her rose-scented couch, our excuse must be that we found her tête-à-tête with our beloved POMONA. They were both so gaily dressed, in the newest summer fashion, for the occasion, that to have passed by without a renewal of our allegiance, would have subjected us to the charge of lacking in courtesy—that our gallantry was on the wane—and that we were guilty of treason in not giving "aid and comfort" to her "unrivalled charms."

FLORA, surrounded by her thousand handmaids, introduced us to the generous POMONA. It is our humble duty to describe what we saw at her court; and although it is almost as difficult to perform, as it is pleasant to contemplate, where so many things were rich "beyond compare," we shall proceed to our task by stating that the tables were strewn with Grapes, Peaches, Nectarines, Figs, Plums and Strawberries, viz:

Strawberries, var. *Princess Alice Maude* and *Hovey's Boston Pine*, by the *President of the Society*.

Grapes, var. *Black Hamburg*, *Grizzly Frontignan*, *Golden Chasselas*, and *Muscat of Alexandria*, from the graperies of *Hon. T. H. Perkins*, by *Wm. Quant*.

John Fisk Allen, of Salem, exhibited twenty-two varieties of Grapes; among them we noticed *Tottenham Park Muscat*, *Wilmot's new Black Hamburg*, (fine,) *Austrian Muscat*, (new,) *Purple Muscat*, (new,) *Zinfendal*, (fine,) *Muscat of Alexandria*, (fine.) The Grapes by *Mr. Allen*, were tasted by the Committee: they were ripe in great perfection.

The Society's first premium of ten dollars was awarded to *Mr. Allen*, and the second premium to *Mr. Quant*.

A. Aspinwall, of Brookline, presented a basket of extra fine Strawberries, var. *Hovey's Seedling*.

By *N. Stetson*, of Bridgewater, very fine specimens of *Boston Pine* and *Jenny's Seedling* Strawberries.

Two boxes of early Virginia Strawberries, by *Otis Johnson*, of Lynn.

S. Downer, Jr., of Dorchester, exhibited *Hovey's Seedling*, *Ross's Phoenix*, *Early Virginia*, *Wiley's Seedling*, and *Wood Strawberries*.

By *John Duncklee*, *Hovey's Seedling* Strawberries.

By *Isaac Fay*, *Fay's Seedling* Strawberries.

By *Josiah Richardson*, Cambridge, *Richardson's Seedling*; also, *Hovey's Seedling*, and *Boston Pine* Strawberries.

A Seedling Strawberry, by *Charles F. Putnam*, Salem; branches and fruit large, appearance good; represented to be a great bearer; pistillate.

By *James M. Richardson*, from the garden of *Capt. Lee*, a seedling Strawberry—large, but the specimens were not highly flavored; probably not fully ripe.

Azell Bowditch presented "Stoddard's Seedling" Strawberries. They were poor specimens of the "Wood."

By *J. L. L. F. Warren*, of Brighton, seven varieties of Strawberries, viz: *British Queen*, *Prince Albert*, *Hovey's Seedling*, *Wiley's do.*, *Mottier's do.*, *Early Virginia* and *Alpine*.

By *Messrs. Hovey*, *Boston Pine* Strawberries.

By *John Owen* of Cambridge, *Wood*, *Red* and *White*, and also a seedling Strawberry.

Mr. Cole, presented an Apple for a name.

By *J. F. Allen*, of Salem, *Figs*, *Plums* and *Nectarines*.

Peaches—by *Mr. Bowditch*, of Roxbury, and *O. Johnson*, of Lynn.

Several of the seedling Strawberries presented were large, and of fine appearance; but to enable the Committee to judge of their respective merits, the specimens should have been fully ripe. And in addition to this, it is highly important to learn whether the plants will bear a full crop of large sized fruit. Of the merits of such new varieties as may be presented, the Committee will form and give an opinion when they have tasted the fruit fully ripe, and have examined and found the variety to be truly "a fruitful vine."

VEGETABLES.—From *Josiah Lovett*, 2d, thirteen stalks of *Giant* and *Victoria Rhubarb*, weighing 21 lbs.; some of the stalks measuring 43 inches.

From *O. H. Mather*, by *Thomas Needham*, some fine *Cucumbers*.

From *T. H. Perkins*, by *Wm. Quant*, some fine *Palestine Lettuce*.

From *Mrs. Pratt*, by *A. McLennan*, *Royal Cape Lettuce*.

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No. 3.

WE BEG LEAVE to inform such of our readers as may be interested, that we have lately had the honor of a personal interview with the distinguished deities that preside over the garden and the orchard, FLORA and POMONA.

The time was a soft balmy August night ; the scene was a leafy nook in our own grounds, where, after the toils of the day, we were enjoying the *dolce far niente* of a hammock, and wondering at the necessity of anything fairer or diviner than rural nature, and such moonlight as then filled the vaulted heaven, bathed the tufted foreground of trees, the distant purple hills, and

“ Tipt with silver all the fruit tree tops.”

It was a scene for an artist ; yet, as we do not write for the Court Journal, we must be pardoned for any little omission in the costumes or equipages of the divinities themselves. Indeed, we were so thoroughly captivated with the immortal candor and freshness of the goddesses, that we find many of the accessories have escaped our memory. POMONA's breath, however, when she spoke, filled the air with the odor of ripe apricots, and she held in her left hand a fruit, which we immediately recognised as one of the golden apples of the Hesperides,

(of which she knew any gardener upon earth would give his right hand for a slip,) and which in the course of our interview, she acknowledged was the only sort in the mythological gardens which excels the Newtown Pippin. Her lips had the dewy freshness of the ruddiest strawberries raised by Mr. LONGWORTH's favorite old Cincinnati market woman ; and there was a bright sparkle in her eye, that assured us there is no trouble with the curculio in the celestial orchards.

But if we were charmed with the ruddy beauty of POMONA, we were still more fascinated by the ideal freshness and grace of FLORA. She wore on her head a kind of fanciful crown of roses, which were not only dewy moss roses, of the loveliest shades imaginable, but the colours themselves changed every moment, as she turned her head, in a manner that struck us quite speechless with admiration. The goddess observing this, very graciously remarked that these roses were the *true perpetuals*, since they not only really bloomed always, but when plucked, they retained their brilliancy and freshness forever. Her girdle was woven in a kind of green and silver pattern of jasmine leaves and starry blossoms, but of a species far more lovely than

any in Mr. PAXTON's Magazine. She held a bouquet in her hand, composed of sweet-scented camellias, and violets as dark as sapphire, which she said her gardener had brought from the new planet Neptune; and unique and fragrant blossoms continually dropped from her robe, as she walked about, or raised her arms in gestures graceful as the swinging of a garland wooed by the west wind.

After some stammering on our own part, about the honor conferred on an humble mortal like ourselves—rare visits of the goddesses to earth, etc., they, understanding, probably, what Mr. BEECHER calls our “amiable fondness for the Hudson,” obligingly put us at our ease, by paying us some compliments on the scenery of the Highlands, as seen at that moment from our garden seat, comparing the broad river, radiant with the chaste light of the moon, to some favorite lake owned by the immortals, of whose name, we are sorry to say, we are at this moment entirely oblivious.

Our readers will not, of course, expect us to repeat all that passed during this enchanting interview. But, as we are obliged to own that the visit was not altogether on our own behalf, or rather that the turn of the discourse held by our immortal guests showed that it was chiefly intended to be laid before the readers of the Horticulturist, we lose no time in putting the latter *en rapport*.

POMONA opened the discourse by a few graceful remarks, touching the gratification it gave them that the moderns, down to the present generation, had piously recognized her guardian rights and those of her sister FLORA, even while those of many of the other Olympians, such as Jupiter, Pan, Vulcan, and the like, were nearly forgotten. The wonderful fondness for fruits and flowers, growing up in the

western world, had, she declared, not escaped her eye, and it received her warmest approbation. She said something that we do not quite remember, in the style of that good old phrase, of “making the wilderness blossom like the rose,” and declared that FLORA intended to festoon every cottage in America with double Michigan roses, Wistarias, and sweet-scented vines. For her own part, she said, her people were busy enough in their invisible superintendence of the orchard planting now going on at such a gigantic rate in America, especially in the Western States. Such was the fever in some of those districts, to get large plantations of fruit, that she could not, for the life of her, induce men to pause long enough to select their ground or the proper sorts of fruit to be planted. As a last resort, to keep them a little in check, she was obliged, against her better feelings, to allow the blight to cut off part of an orchard now and then. Otherwise the whole country would be filled up with poor miserable odds and ends from Europe—“Beurrés and Bergamots, with more sound in their French names, than flavor under their skins.”

These last words, we confess, startled us so much, that we opened our eyes rather widely, and called upon the name of Dr. VAN MONS, the great Belgian—spoke of the gratitude of the pomological world, etc. To our surprise, POMONA declared that she had her doubts about the Belgian professor—she said he was a very crotchety man, and although he had devoted his life to her service, yet he had such strange whims and caprices about *improving* fruits by a regular system of degeneration or running them out, that she could make nothing of him. “Depend upon it,” she said, “many of his sorts are worthless,—most of them have sickly constitutions, and,” she added, with some emphasis, snapping her fingers as she spoke,

"I would not give one sound healthy seedling pear, springing up under natural culture in your American soil, for all that Dr. VAN MONS ever raised!" [We beg our readers to understand that these were POMONA's words and not ours.] She gave us, after this, very special charge to impress it upon her devotees in the United States, not to be too much smitten with the love of new names, and great collections. It gave her more satisfaction to see the orchards and fruit room of one of her liege subjects teeming with the abundance of the few sorts of real golden merit, than to see whole acres of new varieties that have no other value than that of novelty. She said too, that it was truly amazing how this passion for collecting fruits—a genuine monomania—grew upon a poor mortal, when he was once attacked by it; so that indeed, if he could not add every season, at least fifty new sorts from the continent, with some such outlandish names, (which she said she would never recognise,) as *Beurre bleu d'été nouveau de Scrowsyowsy*, etc., he would positively hang himself in a fit of the blues!

POMONA further drew our attention in some sly remarks, that were half earnest and half satire, to the figure that many of these "Belgian pericarps" cut at those handsome levees, which her votaries among us hold in the shape of the great September exhibitions. She said it was really droll to see, at such shows as those of our two large cities, where there was a profusion of ripe and luscious fruit, that she would have been proud of in her own celestial orchards—to see there intermingled some hundred or so mean looking, hard green pears, that never had ripened, or never did, would, or could ripen, so as to be palatable to any but a New-Zealander. "Do solicit my friends there, for the sake of my feelings," said she, "to give the gen-

tlemen who take such pleasure in exhibiting this degenerate foreign squad, a separate 'green room' for themselves." To this remark we smiled and bowed low, though we would not venture to carry out her suggestion for the world.

We had a delightful little chat with FLORA, about some new plants which she told us grew in certain unknown passes in the Rocky Mountains, and mountainous parts of Mexico, that will prove quite hardy with us, and which neither Mr. FORTUNE nor the London Horticultural Society know any thing about. But she finally informed us, that her real object in making herself visible on the earth at present, with Madam POMONA, was to beg us to enter her formal and decided protest against the style of decorations called after her name, and which had, for several years past, made the otherwise brilliant AUTUMNAL HORTICULTURAL SHOWS in our quarter of the globe, so disagreeable an offering to her. "To call the monstrous formations, which, under the name of temples, stars, tripods and obelisks—great bizarre masses of flowers, plastered on wooden frames—to call these after her name, 'Floral designs,' was," she said, "even more than the temper of a goddess could bear." If those who make them, are sincerely her devoted admirers, as they profess to be, she begged us to say to them, that, unless they had designs upon her flow of youth and spirits, that had hitherto been eternal, she trusted they would hereafter desist.

We hereupon ventured to offer some apology for the offending parties, by saying, they were mostly the work of the "bone and sinew" of the gardening profession, men with blunt fingers but earnest souls, who worked for days upon what they fancied was a worthy offering to be laid upon her altars. She smiled, and said the intention was accepted, but not its results,

and hinted something about the same labor being performed under the direction of the more tasteful eye of ladies, who should invent and arrange, while the fingers of honest toil wrought the ruder outline only.

FLORA then hinted to us, how much more beautiful flowers were when arranged in the simplest forms, and said when combined or moulded into shapes or devices, nothing more elaborate or artificial than a *vase-form* is really pleasing. *Baskets*, moss-covered, and flower-woven, she said, were thought elegant enough for Paradise itself. There are not only baskets, continued she, that are beautiful lying down, and showing inside a rich mosaic of flowers—each basket, large or small, devoted perhaps, to some one choice flower in its many varieties; but baskets on the tops of mossy pedestals, bearing tasteful emblems interwoven on their sides; and baskets hanging from ceilings, or high festooned arches—in which case they display in the most graceful and becoming manner, all manner of drooping and twining plants, the latter stealing out of the nest or body of the basket, and waving to and fro in the air they perfume. “Then there is the *garland*,” continued our fair guest; “it is quite amazing, that since the days of those clever and harmonious people, the Greeks, no one seems to know anything of the beauty of the garland. Now in fact nothing is more beautiful or becoming than flowers woven into tasteful garlands or chaplets. The form a *circle*—that em-

blem of eternity, so full of dread and mystery to you mortals—and the size is one that may be carried in the hand or hung up, and it always looks lovely. Believe me, nothing is prettier in my eyes, which, young as they look, have had many thousands of your years of experience, than a fresh green garland woven with bright roses.”

As she said this, she seized a somewhat common basket that lay near us, and passing her delicate fingers over it, as she plucked a few flowers from the surrounding plants, she held it, a picture of magical verdure and blossoms, aloft in the air over our heads, while on her arm she hung a garland as exquisitely formed and proportioned as if cut in marble, with, at the same time, all the airiness which only flowers can have. The effect was ravishing! simplicity, delicacy, gracefulness and perfume. The goddess moved around us with an air and in an attitude compared with which the glories of Titian and Raphael seem tame and cold, and as the basket was again passing over our head, we were just reaching out our hand to detain the lovely vision, when, unluckily, the parti-colored dog that guards our demesne, broke into a loud bark; POMONA hastily seized her golden apple; FLORA dropped our basket, (which fell to the ground in its wonted garb of plain willow,)—and both vanished into the dusky gloom of the night shadows; at that moment, suddenly rising up in our hammock, we found we had been—dreaming.

THE CURCULIO.—We recommended, in the last volume of the Horticulturist, that the ground be thrown up in trenches and ridges late in autumn, around plum trees, that the curculios might be thus frozen. J. J. THOMAS, Wayne county, tried this last autumn, but has this year found it unsuccessful.

He states, that DAVID THOMAS of Cayuga

county, has saved fine crops of apricots and plums the past and present season, by following up the practice which he originated, of jarring them down on white sheets, and then destroying them, and also allowing the pigs free access under the trees, so that they may devour all the punctured fruit, which they do pretty effectually.

POMOLOGICAL NOTES.

BY THE LATE SAMUEL G. PERKINS, BOSTON.

[WE noticed, in our July number, the death of our venerable and respected correspondent, S. G. PERKINS, Esq. Since that time, we have received from his amanuensis, Mr. RHOADES, two articles dictated by Mr. PERKINS before his death, and laid aside for publication in the Horticulturist. One of these follows; the other shall appear in our next; and it is with no little regret, we must then close this series of valuable papers, no less remarkable for their real practical value, than for the fact that they were the last ebbing of a gardening zeal warmly kept up till ripe fourscore.—ED.]

.....
THERE is a notion prevalent with many cultivators of fruits, that the cankered state of many of the *old* pears is owing to their approaching extinction, in consequence of the death of the original or parent tree from which the first scions for grafting were taken; they believing that the progeny of fruit trees, called "Wildings," never outlived the original stock, or, if they did live, were never thrifty growers.

This is what they call "running out," as they consider the St. Michael, the St. Germain, the Virgoulouse, the Winter Colmar, the Winter Good Christian [Bon Chretien,] the Summer Good Christian, the Brown Beurré, and many other kinds.

The same idea attaches to some of the old favorite apples, such as the Golden Pippin, the Pearmain, and other sorts, the cultivation of which has been neglected many years from the prevailing prejudice. This opinion has been abroad for near five and twenty years, and, I think, grew out of some observations of Mr. Knight, late President of the London Horticultural Society, who speaks of the Golden Pippin of Great Bri-

tain as going to decay; and says he considers it run out, and that it cannot be cultivated any longer. But, if my memory serves me correctly, for it is many years since I read his works, he attributes it to a very different cause. He says, if I am not mistaken, that every fruit carries within itself the limitation of its own existence, and that he presumes the Golden Pippin has arrived at that limit, because he has tried to perpetuate the kind by grafting with scions, apparently vigorous and healthy, into young and thrifty apple stocks without effect, the grafts invariably becoming mouldy and shrivelled. This, or something like this, I think, is the assertion of Mr. KNIGHT, whose skill and experience in the cultivation of fruits is, as I believe, acknowledged by all who know him. This proposition appears to me a safe and natural one; for every organized material substance whatever carries within itself the limitation of its own existence—every thing must, I presume, perish—the spirit alone survives.

But is it true that any of these fruits have terminated their existence? The St. Michael, the St. Germain, the Brown Beurré, the Virgoulouse, etc., are all growing now in certain places in Boston, as strong, as handsome, as free from blight, and as good in degree, as they ever were since they were first planted there by the French Huguenots, who introduced all the good pears for which this city has so long been celebrated.*

* Our Boston friends, who think their old favorite, the Doyenne or St. Michael [known in New-York as the 'Virgalieu,'] "run out," should examine the gardens and orchards about Syracuse, Rochester, Oswego, etc., in this State. If we are not greatly mistaken, they will be surprised before a long time with so abundant a supply, via the Western Railroad, of this delicious old pear, from Western New-York, of such size and complexion, as will make them all turn *pomo-resurrectionists*.

The various opinions among your correspondents, relative to the origin and names of pears, induces me to say a few words on this subject, which long experience and acquaintance with the fruits of Europe of fifty or sixty years ago, may perhaps justify.

The French Huguenots, who settled in and about Boston, in the early part of the last century, were many of them men of wealth for that period, and they purchased house lots of considerable extent in the town of Boston, and in the towns in its neighborhood, which they stocked with the best fruits of their native land. This fact is not only matter of history, but within my day; for I can look back, and recollect distinctly the many gardens that were furnished with the largest trees of the finest fruits, that were *common* throughout the town even as late as the years 1810, or even 1815, after which the increased population covered the gardens, and most of the trees, with their luxuriant fruits, soon disappeared. There are a few solitary trees of the old fruits of a hundred years standing, and more left in yards, which continue to produce the finest St. Michaels, St. Germaines, Brown Beurrés, Virgalouse, Winter Colmars, Winter Good Christians, Easter Bergamots, Messire Jeans, etc., as fine as they did fifty or sixty years ago; but of those only one old fruit garden is left, that I recollect, and that is the one belonging to the late S. P. GARDNER, Esq., in Summer street. Here these fine fruits are all raised in perfection, on trees probably more than a century old, under their proper and appropriate names.

The great variety of new kinds of pears brought into existence by Professor VAN MONS, and others who followed his system of propagation, and the careless manner that gentlemen from the several parts of Europe, where they were raised, sent them

abroad under false or incorrect names, has caused much disorder in the nomenclature of these fruits. From the Horticultural Society of London, I received, about twenty-five years ago, twenty-four kinds of various degrees of merit, which they were good enough to send me as a present, with some plums, and twelve or fourteen kinds of strawberries. As this was at an early period in the cultivation of the Van Mons fruits, and little was known either of their quality or their names, as finally established by that extraordinary man, great mistakes were made, and very bad fruits, with high sounding names, and many very fine fruits with incorrect names, came into my hands, and were cultivated by me, and by others whom I had invited to come to my garden for scions. Even to the present day, there is a confusion and misapplication of the names of the Belgian pears, that leads to continual errors and great inconvenience. The Napoleon was sent out by that Society under the name of the Archduke Charles, and by some it is still so called. This fruit is now well known as an excellent early winter pear. The Passe Madeleine was sent to me as a first rate early winter fruit, and the Duchesse de Berri and the Belle de Bruxelles, with many others, as pears of the first order; but when brought to bearing, after several years, they proved to be worthless, although beautiful to the eye. These disappointments are to be sure, very useful lessons, which are much needed in gardens, where constant losses and disappointments occur.

But the mistakes in the names of fruits are not confined to the Belgian pears. Many of the fruits of the olden time are also misnamed, and propagated under names not known in the countries whence they came or originated. Such is the fact with the Black Hamburgh Grape, the true name of

which in Hamburgh, whence it was imported into England, is the *Franckindal*. The peach, so long known in England as the Royal George, is the *Grosse Mignonne* of France, from which country it was carried to Great Britain. [Our correspondent is, we think, in the wrong here; these two sorts are essentially distinct even in their blossoms, one being large and the other small.—ED.] The same fact applies to the peach, called in this country “Morris’s Early Red Rareripe;” that excellent fruit is, I think, also the *Grosse Mignonne* of France.

The evil arises from the fact, that people finding a good fruit of any kind in their own ground, not knowing its proper name, call it, or allow others to call it, by their name. This is not only natural, but unavoidable. I have noticed this for many years, and have done all in my power, without effect, to correct the evil. It is not among the uninformed alone that this habit exists, but men who are at the head of the profession, as cultivators of fruits, run into the same

errors. Mr. KNIGHT, President of the Horticultural Society of London, sent a number of fruits to the late JOHN LOWELL, Esq., under mistaken names, some of which Mr. LOWELL sent to me; as they have fruited, I have been able to correct these mistakes. One of these fruits was called the *Wormsley Grange*, the name of one of Mr. KNIGHT’s estates; but the pear is evidently the *Echassery* of DUHAMEL, a fruit known in France one hundred years ago.

If, therefore, *old* fruits, long known to the world, were frequently misnamed, it is in no wise surprising that *new* kinds, unknown before, should be misnamed, and that their qualities should be unknown for several years after they were brought into existence.

Many of the names under which the pears were sent me by the Horticultural Society of London, are, I believe, extinct; at least I have never met with them in any catalogue of pears now considered as worth raising.

S. G. P.

THE PETUNIA AND ITS CULTURE.

BY AN AMATEUR, NEW-YORK.

THE Petunia, with the success of a good-natured merry friend in society, has found its way into almost every garden. When we take into account, that there is not a day or hour, from the first moment in May or June, that its blossoms begin to unfold, till the cold November frosts absolutely kill it, that it is not literally covered with blossoms, it must be allowed to deserve the place in the garden which it has acquired, though its sweet and somewhat pleasant fragrance is not admired by all, and though it has little beauty of foliage to recommend it.

The two species of Petunia, from which all the fine sorts now coming into cultiva-

tion are raised, came originally from Brazil. The old White Petunia, *P. nactyginiflora*, a coarse sort now rejected from most gardens, was introduced from Brazil in 1823. The old Purple Petunia, *P. violacea*, was brought from Buenos Ayres in 1830.

The English and American gardeners have lately devoted some pains to the improvement of Petunias by crossing these two sorts, and raising hybrids between them. The result already has been the production of a number of new varieties, which completely eclipse the old ones, and are really beautiful ornaments to the parterre. There are now not only plain whites, and rich pur-

ples, but all the intermediate shades, as well as many beautifully pencilled or variegated, and others with dark tubed or throated corollas.

Among the latest and finest new varieties that are cultivated in this country, are the following: *Hebe*, *Nixenii*, *Beauté parfait*, *Competitor*, *Gem*, *Timandra* and *Lady Alice Peel*.



Fig. 17. *The Hebe Petunia*.

Among these, *Hebe*, fig. 17, is, to my own taste, one of the most beautiful. This variety is, in its ground, colour delicate pale lilac, superbly pencilled and marked with rich purple, and with a rich dark rosy purple throat. The plant is one of the finest in its habit, making a broad and spreading plant, bearing hundreds of blossoms, every shoot being laden with flowers. It is certainly an ornament to any parterre.

The others are also fine sorts. *Lady Alice Peel* is smaller in its flowers than most others, and of a delicate violet purple with a pale centre.

It is the easiest thing in the world to cultivate a *Petunia*. The more common sorts

are propagated from seeds, and once established in the flower garden, they sow themselves, and would fill the beds if allowed to do so. The finest sorts are propagated by cuttings, which root freely if taken off at any time from June to September, and planted under a hand-glass, or in a shaded hot-bed covered with a light.

To preserve them for the ensuing spring, cuttings should be taken off early in September, and planted in small pots filled with good rich sandy compost. Here they will soon strike root, when they may be potted off singly, watered and gradually hardened to the air. During the winter, they may be kept in any common sitting room or greenhouse. They are ready for planting out in the open border again as soon as all danger of frost is over, say about the middle of May.

The *Petunia* never produces so striking an effect as when planted in small masses or groups by itself—each mass being composed of a single variety. The plants then spread themselves pleasingly over the surface of the ground in a manner perfectly natural to the genus, and the whole surface is one mass of rich bloom.

The criterion of beauty for the *Petunia*, among the florists, is a flower as nearly round as possible, smooth-edged, free from serratures, and not indented at the divisions; colour bright and distinct; and if variegated, the contrast to be decided, and the veins, stripes or blotches, well defined.

The name *Petunia* is derived from the original Brazilian one, *Petun*.

To those who have but little space, and wish something always in bloom—to those who wish to give a gay appearance to the flower garden—to those who wish a good deal of effect with as little trouble as possible, we commend the finer varieties of the *Petunia*. Yours, sincerely, AN AMATEUR.

REMARKS ON HYBRIDISING PLANTS.

BY PROF. LINDLEY, UNIVERSITY OF LONDON.

[WE reprint the following interesting remarks on originating new varieties of plants by means of hybridising, from the pen of Dr. LINDLEY, in answer to various queries on this subject, which we have received from correspondents in various parts of the country. The subject is, in this country, perhaps most interesting in its application to the production of new varieties of fruit; since, by its means the skilful cultivator may, almost with certainty, produce a new variety combining novel and desirable qualities—as for example, the flavor of the Seckel pear with the size of the Bartlett, and other like combinations, which ages might not give us by the accidental improvement resulting from sowing seeds at random.]

We shall return to this subject soon, with some remarks of our own.—ED.]

.....

AMONG the many contrivances by which man has succeeded in converting the wild productions of untamed nature into bodies better adapted to his artificial wants, nothing has produced more past advantage, or promises more future profit, than HYBRIDISING. We shall not refer in this place to what has been done in the animal kingdom, but confine the attention of the reader to its effects upon vegetation.

The practice is regarded as one of very recent date; and so it is, as an artificial process, applied by rule to definite purposes. But he must be a bold man who dares to assign to it historical limits; on the contrary it may be supposed to date from the Creation—or rather, it is in a manner certain that it does. The presence of winds or insects must necessarily, from the beginning, have produced effects upon plants, which resulted in hybrid productions.

Hybridising is effected by applying to the stigma of one plant the pollen of some

other; the end of which is the generation of a form, participating more or less in the attributes of both its parents. Nature, in her wildest state, opposes no insurmountable difficulties in the way of this operation. Insects, bespattered with the pollen of one plant, plunge into the recesses of another, and thus effectually destroy the purity of races. The natural brush on the body of a bee will convey the subtil powder, as well as the trim camel's hair pencil of the artificial operator.

It is contended, indeed, that this cannot be; because if it were so, all species must, in the lapse of ages, be confounded in one inextricable chaos. But, in the first place, this supposition is of little force, till it is shown that that which is easily done artificially, cannot possibly take place naturally; and secondly, it must be proved that the wild races of plants actually do remain in all their original purity. No botanist would, we suspect, venture upon such an argument as that. The genera *Salix*, *Rubus*, *Rosa*, and *Carex*, would make the stoutest advocate of original purity pause before he threw himself into the lists. Nobody, in fact, can possibly doubt that wild hybrids exist, are common, and are, perhaps, much more frequent than we think for. We will not stop to quote notorious and proved instances of this, because we regard the fact as being beyond all dispute.

Let us not, however, infer from this that no natural obstacles are opposed to the indiscriminate mixture of races in plants; on the contrary, there are barriers which cannot be overleaped. By some mysterious agency, there is a complete bar to all intermixture of plants not closely related to each other. An Elm may certainly mix with an Elm, and perhaps with a Nettle-tree, but not with an Oak. A Peach may, peradventure, cross a Plum, but not an Apple. These obstacles are, doubtless, connected with the molecular constitution of plants, the precise nature of which we have no means of examining. Another obstacle

consists in the obvious fact, that the pollen of a flower has a better opportunity of falling upon the stigma that belongs to it, than pollen brought from any distance ; and we know that if pollen has once taken effect, no after application of other pollen can change the result. In fact, the natural hybridising of wild plants will generally take place when, owing to some accidental cause, the proper stamens of the flower prove defective.

But there is a still more effectual obstacle to the confusion of races by natural hybridising. Although we conceive that the *production* of hybrid plants naturally is of more common occurrence than may be supposed, it must be remembered that the *preservation* of them is quite an artificial process. A hybrid tree springs up ; it has no means of multiplying itself, except by seed. That seed has no stable constitution, but has a tendency to return towards the condition of one of its parents ; in this way the hybrid disappears, while the parents remain ; or it may be, and often is, barren ; and then it remains as a solitary, childless individual. Again, a hybrid herb appears ; it is exposed to the same obstacles as the tree in the way of perpetuation. It is barren ; its seeds of themselves tend towards the original stock, which is recovered in a generation or two ; or they are at once fertilised by the pollen of one of the hybrid parents, when the tendency to a return to its original stock is increased tenfold in strength. It is not, therefore, likely that natural hybrids will often be long perpetuated, although they may be frequently produced.

We mention these things by way of vindicating the hybridisers, who have been accused of attempting to subvert the whole order of Nature, by monstrous practices. It is clear that they only imitate the practices of Nature. It is equally clear, too, that the occasional formation of natural hybrids is intended as a manifestation to man of one of the sources of power with which he is so largely provided. His reason is to be called upon to turn to profitable account that which, in savage nature, leads to no result.

Be this as it may, the practice of hybridising is, as the politicians say, a *great fact*, opposition to which would be fruitless, if it were desirable. People have found out how

much is to be gained by it, and they cannot be checked in its application by the sighs of botanists over the dreaded advent of a chaos of species. All that botanists, afflicted with the *hemionophobia* can do, is to abandon gardens, and seek for solace in uncultivated lands.

Hitherto the operation of hybridising has been mainly confined to gardens. But see what advantages have come of it there. What were our roses in 1789, when the first China Rose reached England ? and what are they now ? The China Rose hybridises so freely with almost every other, that there is hardly an ancient species to which it has not lent some part of its rich foliage, gay colours and abundant blooming. Can anything be more striking than the effect of hybridising upon Pelargoniums, Heaths, Gloxinias, Verbenas and Gladioli ? By this process we have given to the hardy pears of the north, all the richness and delicacy of those of the south ; to watery grapes the perfume of the Muscat ; to the pale-faced but hardy Rhododendrons of Caucasus and America, the rich and glowing colours of their tender brethren of India ; to the gaudy Azalea of Pontus, the crimson of the small-flowered fragrant species of the United States.

Such striking consequences of the very first operations in hybridising, have excited a universal desire to vary and extend them. Everybody now, who cares for his garden, asks himself, in the first place, what he can do to get new seedlings ; and to hybridising he looks exclusively for assistance. If a fine new species of an ancient family appears, its good points, as a "brood plant," (forgive the innovation,) are among the first things discussed ; and its value is much determined by its fitness for hybridising. Nor is it to be wondered at. Hybridising is a game of chance played between man and plants. It is in some respects a matter of hazard ; and we all know how much more excitement is produced by uncertain than by certain results. What increases the charm of the game is, that although the end of it may be doubtful, yet a good player can judge of the issue with tolerable confidence, and that skill and judgment have in this case all their customary value.

Though hybridising has already led to

important results, they are probably nothing compared to what may be expected to come of it. We anticipate, through its assistance, a change in the whole face of cultivated plants, and we shall be much surprised if even a few years do not bring us acquainted with races of trees, esculents, corn and forage plants, of at least as much importance in their way, as those which have already appeared among fruits and flowers; all that is wanted is to call attention to the subject, and to point out what the principles are which the experimenter has to bear in mind.

The effect is produced by applying the pollen of one flower to the stigma of another. The pollen indicates the male parent, the stigma the female. In performing the operation, it is necessary to use these precautions: The female flower must be deprived of her stamens before they burst, and disperse their pollen; and as soon as the stigma is glutinous enough to hold it fast, the pollen must be applied with care. Should this care not be taken, the stigma is very likely to be inoculated with the pollen of her own or some other flower, and then the pollen which it is intended to use will not take; for it must always be borne in mind that a stigma once inoculated cannot be inoculated again. From want of these precautions, people are continually fancying they have obtained hybrids, when they have only gained natural seedlings. At least half the specimens of so called hybrids, sent to us for examination, are not hybridised at all. When the Dean of Manchester, who is the greatest of all authorities in this matter, wishes to obtain a cross, he always endeavors to force the female parent before others of its kind blow, so as to be insured against accidental inoculation from pollen floating in the air. Want of attention to these minutiae has led to some singular errors on the part of a very ingenious correspondent, who fancied he had obtained seedlings between *Crinum*, *Ismene*, *Buphane*, *Calostemma*, etc., while he had only raised the usual seedlings.

It is hard to say within what limits the operation may be successfully practised. The general rule is, that plants only, which are very nearly related, are able to inoculate each other. But there may be excep-

tions to this. At least we know that very near connexions have, or seem to have, a great aversion for one another. For example a Raspberry and a Strawberry are first cousins, yet they appear to have no mind for an alliance. A Gooseberry, Currant, and Black Currant, are still nearer to each other, and their repugnance seems invincible; at least nobody has yet found means to hybridise them with each other, though many have attempted it. On the other hand, Heaths, different as they are from each other, intermingle freely; *Cereus speciosissimus* is readily inoculated by the night flowering *Cereus*; and even the creeping *Cereus* has been crossed with the former; the *Rhododendron* will fertilize the *Azalea*; and strangest of all, the Red Cedar has on several occasions been found to inoculate the American *Arbor Vitæ*, the issue from which is that curious whipcord-branched plant, called in the gardens *Thuja filiformis*. This singular shrub was so produced for the first time in Messrs. Loddiges' nursery at Hackney, and has since been obtained in the same manner at Paris. These facts open a very wide field for inquiry, and are especially valuable as affording evidence that the limits of hybridising are far from being narrow.

In the midst of many experiments conducted without exactness, from which no safe conclusion can be drawn, there are some which, in the hands of such men as the Dean of Manchester, seem to justify the important inference, that as a general rule, the properties of the male parent will be most conspicuous in the hybrid. For example, Mr. Herbert crossed the long-yellow-cupped common Daffodil, with the small red-edge-cupped Poet's Daffodil; and the seeds of the common Daffodil furnished a bulb with most of the attributes of the Poet's *Narcissus*. The same gentleman also obtained out of a capsule of *Rhododendron ponticum*, inoculated by *Azalea pontica*, seedlings which had entirely the habit of the latter or male parent.

In like manner, the arborescent crimson-flowered *Rhododendron atlacense* was raised from the seed of the dwarf pallid *R. catawbiense* hybridised by the arborescent crimson *R. arboreum*; and when the common scarlet *Azalea*, with its crimson flowers

and narrow leaves, was inoculated at Highclere by *Azalea pontica*, Mr. Gower found that its seeds produced plants much more like the male than the female parent. Exceptions, or apparent exceptions to this, do no doubt exist, and hybrids could be found, who are either half-way between their father and mother, or more like the mother than the father; but as far as any means of judging at present exist, these would seem to be the exception and not the rule; and therefore the greater influence of the male may be taken as a tolerably safe guide in all experiments upon this interesting art.

Some of the actual results of hybridising have already been pointed out; others will suggest themselves to any one acquainted with gardening. Let us now consider what further may be hoped for.

What further? Why, we have only stepped over the border, and the whole field of hybridising lies widely spread before us; its boundaries are lost in the horizon, and we shall find them still receding as we advance.

In directing attention to this part of the subject, we do not here propose to include the plants cultivated by the farmer, but to confine ourselves strictly to garden plants. What agricultural applications hybridising may have, will be found hereafter in the other department of our Journal.

The ends which it is hoped to gain by all operations directed towards improving the races of plants, are many. To increase the size of flowers, to improve their colour, to approximate their form to some assumed standard of perfection, to enlarge the foliage as in esculents, to render tender plants hardy, to make barren races fertile, to improve their flavor, by changing acidity or austerity into sugary matter, to exchange early for late varieties, are all results that have been gained by hybridising, and which, therefore, may be gained again. We propose to consider each of these points separately.

How far the *size of flowers* may be thus increased, can be judged of from the Rose, the Dahlia, the Fuchsia, Pansy, Pelargonium, and Cactus. All these plants are, in their wild state, small-flowered; cultivation alone has increased them greatly, but crossing has rapidly carried it further. By ino-

culating the common Heartsease with the large-flowered Pansy of the Altai mountains, a degree of vigor was infused into the former, which we could not have hoped to obtain by any other means. In other cases, as in that of the Dahlia, by observing the first symptoms of a tendency to enlarge in the natural seedlings, and then crossing the best of them, the tendency has received an immediate impulse, which has by degrees brought about the enormous flowers we are all familiar with. The flowers of *Cereus speciosissimus* were inoculated with the pollen of *Cereus grandiflorus* by Messrs. Davis & Co., of Wavertree; and the *immediate* result was a seedling from *C. speciosissimus*, whose flowers were ten inches in diameter. In prosecuting this branch of improvement, care should be taken to select the finest possible flowers on both the father's and mother's side, and to render them unnaturally large by destroying all their neighbors. The plants, too, should be in the most robust health; for we may be sure that no point of constitutional vigor is to be neglected in the parents, when a general and permanent increase of it is desired in their offspring. It is moreover conformable to the experience of the late Mr. Andrew Knight, that even the plumpest seeds are more likely to bring a fine seedling than the weaker.

Among the commoner plants to which attention might be drawn under this head, are not merely those which, like the Verberna, the Petunia and the Cactus, are already in the florist's hands, but others that have yet gained little attention. Take the Clematis, for example: our wild Traveller's Joy is unknown in gardens, although it has a fine foliage, and a great vigor of growth. Why not cross it with *C. florida* or *viticella*, or even *flammula*? Clematis *viticella* is a bad grower, but has beautiful blossoms; it, too, may be certainly improved by some of the finer species. Then, again, the Minorca Clematis, with its fine speckled blossoms, is tender, and flowers very late; what would be the effect of an intermixture of it and *C. montana*, which is so hardy and flowers so early? What a noble plant, too, is *C. azurea* to work with! It must not, however, be crossed with any of the red spe-

cies, for reasons that will be explained hereafter. Can anything be more worthy of attention than this charming genus, which nobody seems to have thought about? To those whose leisure enables them to prosecute such an inquiry, we may state that in all probability the species of Clematis will cross most readily in the following order, viz.—1. *C. flammula*, *vitalba*, and *cylindrica*; 2. *C. florida*, *azurea*, *viticella*, *balearica* and *montana*; but there is no apparent reason why they should not all also intermix, in skilful and patient hands.

Another important race of climbers are the Honeysuckles. The flowers of our common Honeysuckle are little more than an inch long; but those of the beautiful Tuscan species (*Caprifolium etruscum*) are twice as large, and in the *Caprifolium longiflorum* of China the blossoms are full three inches in length. Here are the best opportunities for an improvement of one of our most favorite plants.

Nor do we regard the case of the common Jasmine as hopeless. It is true that it does not produce its berries with us; but if it were kept under glass, and artificially fertilized, it probably would do so. Why not intermix it with the beautiful species from the Azores. It would, in all probability, give its hardness to that plant, and receive in return a finer foliage and more abundant bloom; or, at least, it would hardly refuse to mingle with the Catalonian Jasmine, which is so like it, and then our cottages might be covered with plants as beautiful as those of Barcelona and Italy.

The Laurustinus is another plant entirely neglected by the growers of new plants, and yet there is no reason why its flowers should not become as large as those of the Guelders Rose—itself an artificial production. What would be the effect of inoculating the finest of the varieties of the *Viburnum opulus*, the parent of the Guelders

Rose, with the Laurustinus? Either we should expect an evergreen Snowball tree, or a Snowball Laurustinus; or, at least, a considerable enlargement of the flowers of the latter; or may be the issue would be a hardier Laurustinus than we had before. But that is beside the present question, which we confine to an enlargement of the blossom.

The double Japan and Chinese Cherries (*Cerasus japonica* and *sinensis*), among the finest of our spring shrubs, would be infinitely improved if the size of the common Cherry could be communicated to them; and there is no apparent reason against it. And in like manner, the little Dwarf Almond (*Amygdalus nana*), not now much grown, though a very pretty bush, might, and most likely would, be readily improved by a mixture with the common Almond, or still better with that magnificent variety called in the gardens *Amygdalus macrocarpa*.

If we turn from shrubs to herbaceous plants, there is the same abundance of materials on which to work. Why not attempt to mix *Tropæolum brachyceras* or *canariense* with the common *Nasturtium*? or the beautiful *Hypericum coris* with *H. androsæmum*, or *H. erectum* with *calycinum*? or the annual Larkspurs with *Delphinium grandiflorum*? or the whole race of *Dianthus*, including the Indian Pinks and Sweet Williams, with the Cloves and Carnations? or the gay Sea Lavenders with such plants as *Statice arborea* and *Dickinsonii*? or finally our wild Buttercups with the gaudy *Ranunculus* of the florists?

In all these suggestions there is nothing in the least contrary to probability; the plants that are adverted to are all of common occurrence, and easy for any one to operate upon—indeed they have been selected for that reason; and they offer an abundant reward to skill and patience.

AMERICAN ELM.—This tree, *Ulmus americana*, is much admired for its combination of the graceful and magnificent. Trees taken from the woods are difficult to transplant successfully; the best are raised from

seed. Such will usually outgrow those from the woods. A gentleman near Albany, who plants many from seed, has had them twenty-one inches in circumference, when only eleven years old.

OKRA, AND THE SCIENCE OF SOUPS.

THERE are two vegetables which we have borrowed from the West Indies and the Tropics, that are really great acquisitions to the domestic economy of all classes. We mean the *Tomato* and the *Okra*.

The *Tomato*, which, fifteen years ago, was chiefly cultivated in the gardens of the curious, and was scarcely considered edible to a northern palate, has now become the tenant of every garden, and is used in some form, either raw, cooked, or preserved, in salads, sauces, and stews, or even dried like figs, by almost every man, woman and child in the community. It is, indeed, one of the most valuable and wholesome of vegetables, and the appetite for it which now universally prevails, is but another proof of how much stronger are acquired tastes than natural ones, since we think it may be safely said that the first morsel of *Tomato* is not relished by one person in a hundred.

The *Okra* is another vegetable which, though it has now been cultivated and highly prized in all our more southern cities for years, and is appreciated as it deserves by those who have made its acquaintance at the north, is still far from being a well known or common vegetable in northern gardens.

It is a West Indian plant, and is familiarly known there and in New-Orleans, as *Gumbo*. It is the *Hibiscus esculentus* of botanists, and belongs to the same family as the Mallow, Althea, etc., a group of plants remarkable for its absence of all deleterious properties, and indeed for its wholesome mucilaginous qualities.

The culture of the *Gumbo* is perfectly simple and easy in all parts of the Union where Indian Corn and Lima Beans flourish. About the middle of May, a piece

of warm and rich soil should be prepared, and the seeds sowed in drills two to three feet apart. They may be sowed four or five inches apart in the drills, and finally thinned out to single plants at double that distance. In good soils, the plants will grow from three to five feet high, and produce flowers and pods from midsummer till frost. The flowers are not much unlike those of the African *Hibiscus*, but they are twice as large, and the whole plant is prettier than many of the novelties allowed a place in the flower garden.

The esculent part is the pod, used when about from two to three inches long, fig. 18. Its most popular use in the West Indies and at the South, is as an ingredient in soups, to which it not only gives nice consistency and agreeable flavor, but renders it more wholesome and digestible.

When used in soups, the pod is cut into bits about a quarter of an inch long, and a handful of these is sufficient for soup for a dozen persons. The pods when tender, of the size just mentioned, are also *stewed*

and served up with butter, and if preferred a little nutmeg, which is a very agreeable dish.

The *Okra* or *Gumbo* is considered an ex-

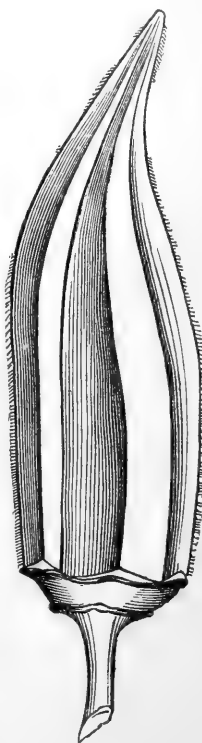


Fig. 18. The *Okra*.

cellent addition to almost any kind of meat soups, but there are some soups especially dignified as *Gumbo Soups* at the south, both from their admitted excellence, and their containing a liberal supply of the Okra. From among them, we have selected the following—a favorite New-Orleans *potage*—the recipe of which, *apropos* of Okra—we present to our readers as producing one of the most capital soups in the world:

GUMBO SOUP.—Take a fowl of good size, cut it up, season it with salt and pepper, and dredge it with flour. Take the soup kettle, and put in it a table spoonful of butter, one of lard, and one of onions chopped fine. Next fry the fowl till well browned, and add four quarts of boiling water.* The pot should now, being well covered, be allowed to simmer for a couple of hours. Then put in twenty or thirty oysters, a handful of chopped okra or gumbo, and a very little thyme, and let it simmer for a half an hour longer. Just before serving it up, add about half a table spoonful of *feelee* powder.† This soup is usually eaten with the addition of a little cayenne pepper, and is delicious.

To those of our readers who may be inclined to marvel at our attention to soups, we must beg to bring forward as our illustrious prototypes, Gen. SCOTT, M. SOYER, and Baron LIEBIG.

Gen. SCOTT has shown to the country, that with enemies both in the front and rear, there is yet time for a man of genius to take—hastily to be sure—his plate of soup. M. SOYER, the *artiste* of the Reform Club House, went out to Ireland, and established his claim to the gratitude of philanthropic posterity by his model soup-kitchen, by which thousands of starving sons of Erin

are supplied with nourishing food at an incredibly small expense. And finally, Baron LIEBIG, the world-renowned chemist, has just written a letter to Mr. EVERETT, in which he unfolds the whole *philosophy of soup-making*, and indeed of cooking meats generally. As there is really sound practical “information for the million” in his remarks, as well as some chemical novelty, we shall venture to extract a large portion of his letter for the benefit of our readers.*

“If you leach finely chopped meat with cold water, you procure a red fluid, and a white residue. The latter is the actual muscular fibre, and the solution contains, besides the above named bodies, a considerable quantity of albumen, that may be separated as coagulum by heating the fluid to boiling.

“I have found that the residue (the muscular fibre) either for itself, or boiled with water, is tasteless, and that the water in which the fibre has been boiled derives no taste. The fibre, by boiling, becomes hard and altogether unpalatable.

“All the ingredients having odor and taste, may of course be abstracted with cold water. They are contained in the flesh-fluid of slaughtered animals.

“You will not wonder, my most respected sir, if I now turn to receipts for the kitchen.

“It follows from the above, that one can make for himself the best and strongest broth (*Fleisch-brühe*, *Bouillon de viande*), if, e. g. a pound of finely chopped (minced) beef with a pound (pint) of cold water be carefully mixed, and then slowly heated to boiling, and the fluid separated from the solid parts by pressing through clean cloth. This broth, with the usual condiments (broiled onions, vegetables, salt, etc.) added,

* We give the receipt as it is used, but think it better if cold water were added.

† *Feelee* powder is made of the leaves of *sassafras*, dried in the shade, and then pulverised very finely. It gives an exquisite flavor to this soup.

* For the remainder, see *Silliman's Journal of Science*, July 1847.

will furnish a dish beyond the criticism of the most fastidious gourmand.

"Longer boiling will *not* necessarily make the extract stronger. If the broth be slowly evaporated over a water bath, it will become brown, and assume a fine taste like broiled meat. If evaporated (by exceeding gentle heat) to dryness, it yields a brown mass, of which upon a journey, for example, half an ounce would convert a pint of water into the strongest broth. By boiling a piece of meat in the water, a separation of the solution from the insoluble ingredients takes place. The soluble ingredients go into the extract—the broth—the soup. Among these, besides those bodies mentioned above, are the alkaline phosphates. The thoroughly boiled meat contains no alkaline phosphates.

"Now as these latter salts are necessary for the formation of blood, it is clear that the *fully boiled** meat, by the loss of them, loses its capacity to become either blood, or through blood to become flesh; *it loses its nutriment when eaten without the juices—the extract.*

"In this extract the materials for the formation of albumen and fibrin are both wanting. *Alone*, also, it is not nourishing. *The method of roasting is obviously the best to make flesh the most nutritious.* But as the extract—the broth—contains *all the ingredients of the acid gastric juice*, it may, perhaps, be the best agent to aid the process of digestion in cases of dyspepsia.

"Finally, I have found that the brine which forms in the salting of meat, contains all the ingredients of the flesh-fluid. The composition of salted meat is essentially different from that of fresh meat,—inasmuch as phosphoric acid, lactic acid, and the salts of these acids—together with creatine and creatinine are abstracted by being

* By this term, it is intended to convey the idea of boiled till no further change occurs, or nothing is extracted.

packed down in salt. The salted meat becomes partly reduced, by this process, to a mere supporter of respiration.* This may be a source of scrofula, where by eating salt meat, the replacement of the wasted organism is but imperfectly effected—where it loses its constitution without regaining it from the food.

"The temperature in the interior of a piece of meat to be boiled or roasted, rarely exceeds 212° Fahrenheit. The meat is done and palatable when it has been exposed to a temperature of 144° F., but it is in this condition red, like blood. The blood-red places—the undone portions—were subjected at the highest to a temperature of only 140° F. At 158° to 162° F. all these places disappear. At 212° F. the fibre breaks up, and becomes harder. The crusty property of the meat in chewing, depends upon the quantity of albumen, which in a coagulated condition, permeates the fibre. The flesh of old animals is deficient in albumen.

"If a piece of meat be put in cold water, and this is heated to boiling, and boiled till it is 'done,' it will become harder, and have less taste, than if the same piece had been thrown into water already boiling. In the first case, the matters grateful to the smell and taste, go into the extract—the soup; in the second, the albumen of the meat coagulates from the surface inward, and envelops the interior with a layer which is impermeable to water. In the latter case the soup will be indifferent, but the meat delicious."

The pith of the foregoing "facts in physiological chemistry," for the domestic economist, we take to be concisely as follows:

1. Soup should always be made by putting the meat in cold water, and *simmering* not boiling it.

* LIEBIG divides food into two kinds. One serves in the formation of tissues; the other goes to sustain animal heat—as sugar and fat. The latter supports respiration.

2. Meat thoroughly boiled in this way, itself loses all, or nearly all, its nutritious qualities, which pass into the soup or extract. But eaten along with the soup, both are rendered more nourishing.

3. Soup, *properly made* in this way, assists the digestive organs.

4. *Roasting* is, of all modes of cooking meat, that which presents it in the most nutritious form.

5. Boiled meat is far the most nutritious and palatable, when it is cooked by putting it into *boiling* water.

6. Too great use of salted meat has a tendency to waste and impair the bodily frame.

If M. SOYER were to travel through the

United States, he would tell our country hotel keepers, that to make good soup, they must use cold water—simmer, and not boil—and always make it a day before it is wanted, so that all fatty excess can be taken off after it is cooled. This gives the pure, clear, nourishing broths of the French kitchen, instead of the washy mixtures often seen under the name of soups.

To come back to the *Okra*, we may observe in conclusion, that it is easily preserved for use during the whole year, by cutting the pods into narrow rings or sections, and drying them. At the south, they are seen hanging on strings at the doors of the cottages, much in the same way that dried apples are in many parts of New-England.

NOTES ON AMERICAN GRAPES.

BY W., ALBANY.

DEAR SIR—I observe that neither in the agricultural journals nor in the Horticulturist, has anything been said which may be taken as a guide by persons at the north, wishing to select the most desirable native grapes for their gardens.

I speak now more especially with respect to the comparative *hardiness* and productiveness of the different varieties to be found in commercial gardens; for it must be observed that, as most of the sorts cultivated are *southern* in their origin, they are not entirely hardy so far north as the latitude of this city.

I should be glad, therefore, to contribute something towards this needed information, hoping that others, in different sections, may offer you also the results of their experience.

I will begin by saying, that the *Isabella* and *Catawba* are the two native sorts which succeed best here under all circumstances.

The *Isabella* is the hardiest, and will usually ripen a full crop in almost any situation. The *Catawba* also ripens fine crops in the sheltered yards of the city, but cannot be depended upon for doing so as far north as this, except in warm aspects—such as the south side of buildings, etc.

There is a variety of the *Isabella* known as the *Clinton grape*,* which is said to have originated in the town of this name in this state, which is much hardier and *earlier* than the *Isabella*; and though it is not, perhaps, worthy of much attention farther south, where the *Isabella* always ripens well, it is considered a valuable variety here.

Though the *Isabella* and *Catawba* are treated as hardy here, and will stand our winters usually, I have found that they bear better crops when the vines are covered at the approach of winter.

* Will some friend send us some specimens of the fruit and leaves of this variety, and some account of its origin?—ED.

Bland's Virginia grape is found too tender and too late in its maturity for the climate of Albany.

I am sorry to be obliged to add, that judging from the experience of two winters, the *Ohio*, or *Cigar-Fox Grape*, will also be found too tender for us. It has been twice killed to the ground in a garden in the suburbs of this city.

I have found that the hardiness and productiveness of the native grapes in the heavy clay soil of my garden, are greatly augmented by digging trenches, like drains, three or four feet broad, and three feet deep, when making borders to plant the grapes. These trenches should be filled about a foot deep with small stones, and then with a layer of bones upon the top, if they can be had. Upon these fill up with good rich soil. The drainage (the drains should have a fall and outlet,) will keep the roots dry, and the vines will stand the winter's cold better, and ripen their fruits earlier as my own experience has satisfied me.

It appears to me that the improvement of the northern species of grapes found in the woods, would be well worthy the attention of horticulturists. The common summer and fox grapes, though they are so pulpy and rough as to be unpalatable, may they not be improved by taking them into the garden? We might then have perfectly hardy grapes, even for the latitude of Quebec. Pray suggest this to your experimenting readers, and believe me your friend.

W.

Albany, August, 1847.

P. S. What is the character of *Norton's Seedling*?

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REMARKS.—Although Albany is scarcely a degree and a half of latitude north of us, we have found, as our correspondent states,

that its climate is much more severe upon plants than this part of the Hudson.

The *Isabella* and *Catawba* are both perfectly hardy here, and the latter, in open situations, never fails to ripen a fine crop. The same remark applies to the *Bland* grape, which, however, is one of the latest varieties. The *Ohio* proves quite hardy and productive here, and though the fruit is small, the bunches are large, and the flavor is agreeable. *Norton's Seedling* is hardy, and may be a good wine grape, but it is harsh and unpalatable to the taste.

The experiment of cultivating our northern wild fox grapes, with a view to improving the quality of their fruit, has already been fully tried by the late Prof. GIMBREDE of West Point. That gentleman, full of zeal in vine culture, collected, fifteen years ago, every known variety from our woods, and cultivated them in his garden, manuring, stimulating and pruning them with great care, in the hope of changing and ameliorating their character. The experiment was, as might have been expected, a failure, although the fruit was greatly increased in size, some of the sorts of fox grape being larger in the berry than the largest *Black Hamburgs*, yet the flavor and original rough taste of the species remained unchanged, and the fruit was, in fact, as unpalatable as at first.

To improve wild grapes of the woods, the seeds must be planted; and when the seedlings come into bearing, by selecting such as show a *tendency to vary* from the wild state in leaf and fruit, and sowing their seeds, it is probable that new and improved varieties would soon be produced. This result, however, would be much more certainly and speedily attained, if the wild vine blossoms were *crossed* or *hybridized* with some of the best foreign sorts.—ED.

FIVE NEW OHIO CHERRIES.

BY F. R. ELLIOT, CLEVELAND.

[MR. ELLIOT has left with us, for publication, the following descriptions of the new seedling cherries originated by Dr. KIRTLAND, the most successful amateur cultivator in northern Ohio. They are accompanied by faithful outlines, made from average specimens of the fruit; and both descriptions and outlines are the result of two seasons' observations of the varieties in a bearing state.

Dr. KIRTLAND's collection embraces most of the finest old European sorts, and from his critical observation, and the fact that the following new sorts have been selected by himself and Mr. ELLIOT from a great number of seedlings of considerable merit, we may be safely allowed to anticipate, that they will prove an important addition to our list of valuable standard cherries. It will be observed, that among these are sorts remarkable for very *early* and *late* maturity.

—ED.]

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Fig. 19. *Ohio Beauty*.

1½ inches, rather stout and set in a deep

1. OHIO BEAUTY.

A heart cherry. This is really a most beautiful fruit. It is as large as Napoleon Bigarreau, with the superiority of being tender-fleshed, and ripening *ten days earlier*. Fruit large, oval, flattened, heart-shape. Colour, dark red on a pale red ground, somewhat marbled. Stalk long

open cavity. Flesh white, very tender, delicate, juicy, with a fine flavor. Pit small, oval, roundish-oblong, with a sharp edge round its centre. [No. 7 of Dr. KIRTLAND's private catalogue.] Ripe about the fifth of June.

2. THE DOCTOR. This fine new sort is one of the earliest of cherries, and one of the best. It very much resembles the American Heart, but ripens two weeks earlier

Fig. 20. *The Doctor*.

than that cherry. The tree is spreading, of moderate growth, the leaves narrow, bears in clusters and is very productive. A Heart cherry. Fruit as large as American Heart. Form roundish heart-shape. Suture extends quite round the fruit. Colour light yellow and red, beautifully blended and mottled. Stalk an inch and a half long, neither slender nor stout, set in a round regular cavity. Flesh white, juicy, tender, sweet, and of a delightful flavor. Ripe first of June. [No. 22, Dr. K.'s Catalogue.]

3. KIRTLAND'S MARY. A high flavored fruit, as large as the Napoleon Bigarreau, ri-

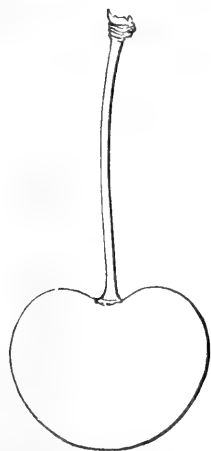


Fig. 21. *Kirtland's Mary*. Fruit large, roundish-heart shape, very regular. Colour light and dark red, deeply marbled on a yellow ground—the dark red preponderating. Stalk an inch and a quarter to an inch and a half long, slightly curved, moderately stout. Flesh light yellow, half tender, rich, juicy, sweet and high flavored. Ripens in medium seasons with the Elton. [No. 17, Dr. K.'s Catalogue.]

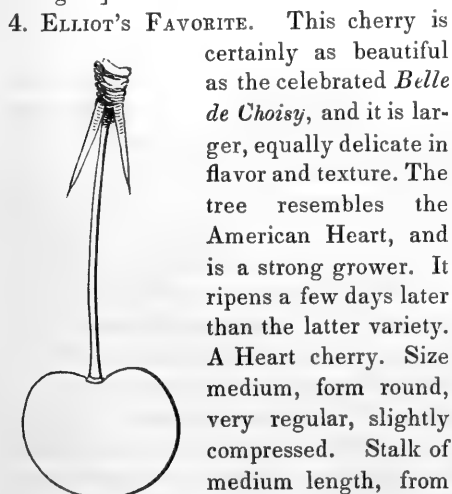


Fig. 22. *Elliot's Favorite*. Fruit large, roundish-heart shape, very regular. Colour a pale amber yellow, with a bright

pening with the Elton, more hardy and easy of culture than the latter is with us here, and equal in other respects. A bigarreau cherry. Fruit large, roundish-heart shape, very regular. Colour light and dark red, deeply marbled on a yellow ground—the dark red preponderating. Stalk an inch and a quarter to an

inch and a half long, slightly curved, moderately stout. Flesh light yellow, half tender, rich, juicy, sweet and high flavored. Ripens in medium seasons with the Elton. [No. 17, Dr. K.'s Catalogue.]

4. **ELLIOT'S FAVORITE.** This cherry is certainly as beautiful as the celebrated *Belle de Choisy*, and it is larger, equally delicate in flavor and texture. The tree resembles the American Heart, and is a strong grower. It ripens a few days later than the latter variety. A Heart cherry. Size medium, form round, very regular, slightly compressed. Stalk of medium length, from an inch and half to two

carmine-red cheek marbled. Flesh pale amber colour, transparent, tender, exceedingly delicate, juicy and sweet, with a fine high flavor. Pit small, angular, smooth and regular on the surface. [No. 3 of Dr. K.'s Catalogue.]

5. **LATE BIGARREAU.** This must prove a valuable late variety, since it is as large

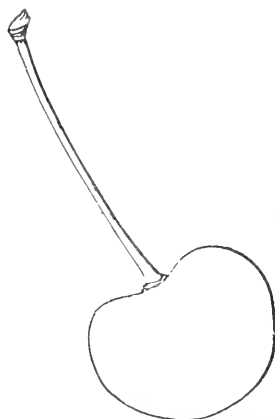


Fig. 23. *Late Bigarreau*.

as the *Bigarreau*, and as late as *Downer's Late*. In character it embraces the *Bigarreau* and *Downton*, partaking apparently of each. The stalk is inserted like the *Downton*, while it is broad like the *Bigarreau*. Fruit large, obtuse heart-shape. Colour a rich yellow ground, with a bright red cheek, or frequently the red covering nearly the whole surface; occasionally it is blotched or mottled. Stalk pretty uniformly an inch and a half long, inserted in a deep, open, regular cavity. Flesh yellowish, firm, juicy, rich, and of agreeable flavor. Pit rather small, quite round, surface pretty smooth and regular. [No. 1 of Dr. K.'s Catalogue.]

F. R. ELLIOT.

Cleveland, Ohio, Aug. 1847.

REMARKS ON GARDENING AS A SCIENCE.—No. 4.

BY DR. WM. W. VALK, FLUSHING, L. I.

"It is quite evident," says LIEBIG, "that the quantities of carbonic acid and oxygen in the atmosphere, which remain unchanged by lapse of time, must stand in some fixed relation to one another; a cause must exist, which prevents the increase of carbonic acid, by removing that which is constantly forming; and there must be some means of replacing the oxygen which is removed from the air by the processes of combustion and putrefaction, as well as by the respiration of animals. Both these causes are united in the process of vegetable life."

Carbonic acid, or fixed aerial acid, is the inevitable product of combustion and respiration; and the atmosphere is the recipient of the gas so produced. Any one may convince himself that it is always present, by exposing a little pure fresh burnt lime, or a glass of strong and clear lime water, to the air, for a few days. Neither of these would hiss, (effervesce,) were a drop or two of any acid applied to it; but after being so exposed to the air for some time, the lime would be converted to carbonate of lime, and the lime water would lose its pellucidity (clearness,) and be covered with an insoluble brittle scale. Both would effervesce with the extrication of frothy air-bubbles; and these changes are produced by the attraction exerted by the pure lime upon the carbonic acid of the atmosphere, which causes a union of the two, and the formation of that neutral salt of lime, commonly known by the term, chalk. If an estimate is wanted of the actual quantity of this acid contained in the air, let us again turn to LIEBIG.

"The air contains in maximum, $\frac{21.000}{10000}$ of

carbonic acid, and $\frac{21.000}{10000}$ of oxygen gas. A man consumes in one year 166,075 cubic feet of oxygen gas, (or 45,000 cubic inches in one day, according to Lavoisier, Seguin, and Davy;) a thousand million of men must accordingly consume 166 billion cubic feet in one year; this is equal to $\frac{1}{1000}$ of the quantity which is contained in the air in the form of carbonic acid. The carbonic acid would thus be doubled in a thousand years, and man alone would exhaust all the oxygen, and convert it into carbonic acid, in three hundred and three times as many years. The consumption by animals and the process of combustion is not introduced into the calculation."

There is not, perhaps, in the whole economy of wonder-displaying nature, a fact more conclusive, more simple, and yet more astounding, than the one which the foregoing extract reveals. For if some agency were not unceasingly at work to withdraw that volume of poisonous gas, which every act of combustion and respiration pours into the air, the whole would inevitably be converted into a pestilential vapor. *Nitrogen* is destructive of breathing life, and of it we have seen that no less than four-fifths of the entire atmosphere consists; the remaining fifth of oxygen is the sole meliorator—and of it every breath we inspire consumes a portion. Then, "how does it happen that the proportion of oxygen in the atmosphere is thus *invariably the same*? Carbon and the elements of water form the principle constituents of vegetables; the quantity of substances which do not possess this composition being in very small proportion. It is therefore certain, that plants must pos-

sess the power of decomposing carbonic acid, since they appropriate its carbon for their own use. The formation of their principal component substances must necessarily be attended with the separation of the carbon of the carbonic acid from the oxygen, which *must be returned to the atmosphere*; whilst the carbon enters into combination with water or its elements. The atmosphere must thus receive a volume of oxygen for every similar volume of carbonic acid which has been decomposed."

Thus reasons LIEBIG; yet upon this *great miracle* of nature he advances no novel idea; he only brings us back to the observations of SENNEBIER, Dr. PRIESTLY, DE SAUSSURE, and others; but his modes of proof, his deductions from calculation, are his own. That many have doubted the grand facts which he has confirmed, is as true as it is lamentable; for there is not in all creation one other traceable agency, by which the destructive increase of carbonic acid could be prevented, if we deny it to vegetable vitality! "The life of plants is closely connected with that of animals, in a most simple manner, and for a wise and sublime purpose. The presence of a rich and luxuriant vegetation may be conceived without the concurrence of animal life; but the existence of animals is undoubtedly dependent upon the life and development of plants."

Plants not only afford the means of nutrition for the growth and continuance of animal organization, but they likewise furnish that which is essential for the support of the important vital process of respiration; for besides separating all noxious matters from the atmosphere, they are an *inexhaustible source of pure oxygen*, which supplies the loss the air is constantly sustaining. Animals, on the other hand, *expire* carbon, which plants *inspire*; and thus the compo-

sition of the medium in which both exist, namely the atmosphere, is maintained constantly unchanged.

This beautiful reciprocity speaks volumes: it sets aside that weak appeal to the agency of *humus*, which has of late years been so imperiously urged. The presence of manuring matter in the soil, and the important changes which it operates, have doubtless tended to blind us to the more important agency of the atmosphere; but why decaying vegetable matter, whose decomposition is effected by the agency of the air and moisture, should be identified with the *artificial humus of the laboratory*, is a mystery. If such be the results of the application of chemistry to the theory of agriculture, we are free to confess, that we should prefer the ignorant routine of our forefathers. They pay a poor compliment to science, who thus misapply its discoveries.

As applied to the nutriment of vegetables, Dr. LIEBIG has thus far been followed in his leading principles of chemical philosophy; his last great proposition being this—that plants derive their nutriment chiefly *from the atmosphere*; during and by which process they purify the air, absorbing that gas which would otherwise so accumulate as to become destructive to animal life.

The hypothesis is startling, because it overturns all our ideas previously entertained, respecting the source and channels of the nutrimental sap. It remains then to investigate a little more minutely *the agency of manures*, and to discover, if it be possible, the effects which *they* produce upon plants in the different stages of their growth. By the term *manure*, we wish it to be understood that we mean *every substance which is decomposable in soils*, and capable of being resolved into the elements of water, (*oxygen and hydrogen*), of carbonic acid,

(*oxygen and charcoal or carbon*,) and of ammonia, (*hydrogen and nitrogen*.)

We make no allusion to manure in its limited sense, as applied agriculturally, but look at it broadly in its most simple, as well as most complicated form; and therefore, to make a commencement, we refer to that most feeble of all substances employed by the gardener, usually styled *peat*, and formerly called *bog earth*. This black-greyish or brown soil consists chiefly of white siliceous sand, mixed with varying portions of fern, bog moss, (sphagnum,) heath leaves, rushes, or similar matter, in a condition of progressive decay. It is seldom used fresh, but usually laid up in heaps to mellow, for woe be to him who shall touch it in its *pristine state*. Buried in the darkness of ages, swamped with water, and of a butyraceous compact texture, it is incapable of affording support to any plant but the miserable herbage upon its surface. Yet this crude earth is a *mine of manure*, and by the operation of air, light, and atmospheric electricity, it is meliorated, and becomes qualified to support all the hair-rooted tribes which are now so ornamental in our best gardens. To one ignorant of chemical principles, and who shall use it fresh, the consequences are inevitable; "it burns every root it touches,"—the plant dies.

This "burning," which is a word in common use, is false in application, though its effects are apparent. Plant an Azalea in fresh peat, and in a few days, the points, then half the leaves, become brown, the shrub ceases to grow, the leaves fall, and it perishes. But keep this *same soil* during two seasons exposed to the weather, turning it occasionally, and the same species which would perish in it while fresh, now grow, and thrive luxuriantly. To what then is this "burning" attributable? To the effects of gaseous developments, produced by

progressive decomposition of the redundant vegetable matter. In farm-yard dung, *ammoniacal* gas is copiously extricated, but in peat or heath soil, some neutral salt of iron exists, (the sulphate probably,) which is gradually decomposed, loses its acid, and becomes an innocuous oxide.

But this is a digression, though one which involves many curious phenomena—it is our object to show, that simple as is this heath soil, an Azalea, a Rhododendron, an Erica, or Andromeda, may grow in a pot of it for years, and never exhaust it of any portion of its "humus" or black vegetable matter. If any discernable alteration takes place, the tint becomes darker, as if finely powdered charcoal had been added to it. True, the plant will require fresh aliment and more space, but not because the soil is exhausted. The vegetable adds to the soil, or rather ejects into it *fæcal* and excrementitious substances, which consequently cannot be taken up a second time with impunity into its organic tissue.

It is every day becoming more and more apparent, that soils are *changed* by cropping, *but never exhausted*. The earths proper—alumine, sand, lime and oxide of iron—may be taken up, *to a very small extent*, in a state of solution in water, but they retain their qualities in the mass, the *soluble* salts of the soil—potassa, soda, and their sulphates, nitrates and muriates, or ammonia and its salts—these are the substances which vanish, and must be renewed by manures. We, therefore, urge upon our horticultural friends, to examine strictly all the earths they employ before they plant in them, and at every shifting. By thus investigating, a person may soon satisfy himself, that a soil becomes replete with specific odors, that its texture is changed, and its nutrimental power deteriorated, *as respects the individual plant*, while it becomes ex-

tremely congenial to another of *dissimilar* habit; but that in every case the soil rather acquires depth and intensity of tint than the contrary—that it loses little in bulk, which little may be safely referred to watering and solidification—and therefore that the *humus* has not diminished in any degree by the absorbent powers of the roots.

WM. W. VALK, M. D.

Flushing, L. I., Aug. 8, 1847.

THE BEST EVERGREEN HEDGE.

BY ROBERT NELSON, OF NEWBURYPORT, MASS.

THE first settlers of the United States, after having cut down the forests, surrounded their fields with rail fences, as the easiest and cheapest way of enclosing them. Turning up their soil, and clearing it from rocks, they considered it a good plan to build stone walls, as cheap but equally imperfect. These require continual repairs, and instead of protecting the fields from cattle and plundering bipeds, they rather seem to invite all such to cross the fields and pull them down. Made in a more durable way, they are very expensive, and even the best of them, such as are to be seen on Indian Hill, near Newburyport, look like a small imitation of the Chinese wall, or some fortification constructed by the "outer barbarians;" and still there are persons, (who would believe it?) that will say, "if you want a live fence, then build a good stone wall, and then you may plant a hedge close to it." Such men, I am sure, never had any idea of a well trimmed hedge.

Though the taste for improvement and embellishment is coming on with giant paces, the more intelligent people begin to abandon this barbarous mode, and it is now the question which plant is the most suitable. For the southern states the Osage Orange is highly recommended; for the eastern states the Buckthorn (*Rhamnus catharticus*), and among the deciduous shrubs it may be the best; but there is another

plant, an evergreen, perfectly hardy, and of the easiest culture, which I cannot too strongly recommend to your readers. I mean the Norway Spruce, (*Pinus abies*, Linn.)

For an ornamental evergreen hedge, the Arbor Vitæ, *Thuja occidentalis*, has been recently brought into use, and may be seen in high perfection in Mr. DOWNING's grounds at Newburgh; but though it forms a beautiful thick screen, yet it is not strong and close enough to make a hedge that will be a *thorough defence against man and beast*.

The Norway Spruce, highly useful for the gardener as well as for the farmer, for protection as well as for ornament, is a native of Norway and Sweden, and was introduced into England in the middle of the sixteenth century. In its native country, it may be seen growing in the roughest and wildest places, on gravelly soil as well as on peat ground; on deep sand as well as on the most barren rocks. Indeed, if it can only find a small cleft to strike its roots; and although some English authors consider it only fit for a "sheltered situation," it may be seen exposed to all the storms that rage on the western coast of Norway between the sixtieth and seventieth degrees of north latitude, often attaining a height of 150 feet: thus its hardiness cannot be doubted for any part of the eastern states.

This tree, in Denmark, in a climate much like that of Boston, is often used for hedges. I have seen them there from five to fifty years old; and I have planted and managed several thousands of yards of it as hedge.

No evergreen bears trimming better than the Norway Spruce. It may be cut into any shape, and after a few years' trimming it presents a strong green wall of great power of resistance.

I am, therefore, quite confident, that it will prove a first-rate and beautiful hedge plant for New-England.

Raising Plants.—This tree is only raised from seed, which, when sown in drills early in spring, in light sandy soil, soon vegetate, but as the young plants carry the seed on the top of the fruit leaves, they are apt to be destroyed by birds, and will want protection for some time. The easiest way to do this, is to cover the seed bed with some brushwood. As the plants in the first summer have but tender roots, the powerful sun and drouth of America will undoubtedly scorch them, and it is, therefore, always advisable to sow them in a *shady situation*. The second spring they ought to be transplanted to six inches distance from each other, in order to form nice stocky plants, and thus better fit for a hedge. This is seldom performed in the commercial nurseries, where they commonly remain in the seed bed for several years, in order to save space and trouble, but these plants are much inferior to the first mentioned.

Planting.—When two or three years old, and having attained a height of about from one to two feet, the seedlings are to be transplanted where they are wanted for a hedge. It will be remembered, that manure is almost death to the Norway Spruce, which is most fond of sandy, or still better, gravelly soil, and I have known hedges of this tree to grow most admirably, when

planted on sunk fences. Where the soil is very rich, it would be well to dig the trench pretty deep, and fill it with small rocks to the depth of six inches. The transplanting should be done in spring, and it need not be very early; even the middle of May is often not too late, unless we should have a very forward season. Transplant with as large a ball of earth as possible, or else be careful to get all the roots, and not to let them dry; press the ground about the roots, but not too firmly; water directly and plentifully, which will settle the ground best around the roots; and afterwards occasionally in a dry season, till they begin to grow. If wanted for an ornamental hedge in a garden, to grow only about four feet high, the plants ought to be set out from nine to twelve inches apart; but when the hedge is wished to grow six or seven feet high, they must be planted one foot apart.

For an outside hedge, as a protection against cattle, or for subdivisions in the fields, where they are desired to give shelter against high winds, I would advise the choice of plants two feet high, and that they be planted two feet apart. As soon as the hedge is set, it will be necessary to protect it with a few rails for a couple of years.

Finally, I must mention, that, if the hedge is to be planted on a very windy, rude and exposed situation, it will be of no use to take seedlings from a sheltered place in a nursery. Such a hedge will never do well, unless *raised from seed on that very place*, and afterwards thinned out; and if this could not be done, the seedlings must be raised in a similar open situation, exposed to any change of weather; and probably this may be the reason why the English authors incorrectly think the Norway Spruce not perfectly hardy when exposed to high winds.

Although many gardeners and nursery-

men recommend the planting of hedges in double rows, still, for several reasons, I most decidedly prefer to plant only single rows.

Trimming.—A good hedge ought never to be trimmed in any other way than in a conical shape. Nature teaches us best, and a very little observation, I think, shows plainly that this is the natural way. It may be considered tasteless and absurd, to trim a hedge in a square form, in point of beauty, or, still worse, broad at the top and narrow at the bottom; but when we reflect that the growth of the bottom of the hedge is checked and stifled by allowing it to be broadest at the top, reason should teach us to abandon that mode on the ground of unfitness.

As soon as planted, stretch a line, and with a hedge shear trim both sides in a convenient *conical form*, leaving the top till the hedge almost has attained the desired height.

A well trimmed hedge in a small garden, four feet high ought never to be broader at the bottom than twelve inches, and should slope to the top in a very acute angle. For each foot higher it may be allowed to grow two or three inches broader at the bottom, and in that proportion at any height. In this way only, every shoot will enjoy the full benefit of air, light and moisture, and by this simple and natural method, you will, in a short time, form a hedge such as I have often seen, as green and close from bottom to top, that even a sparrow could not without difficulty pass through it.

A hedge, until it has attained the desirable size, may be trimmed at least twice in a summer, with a hedge shears; afterwards it can be much easier, more quickly, and as well done, with a sharp sickle or hook.

ROBERT NELSON.

Indian Hill, near Newburyport, Aug. 9, 1847.

.....

[The remarks of our Danish correspondent are worthy of attention. The vigor, hardiness and rapid growth of the Norway Spruce appear to us well calculated to render it a capital evergreen hedge plant. Mr. NELSON assures us, that he has seen them shorn into "strong walls of verdure," and we know there are few trees so admirably adapted to form thick screens for shelter in windy or exposed situations. When of small size, they are very easily transplanted. The Norway Spruce, though it be found in most of our nurseries, is not yet grown in sufficient abundance to be offered cheaply as a hedge plant, being in demand principally as an ornamental tree. But in the English nurseries, such as that of SKIRVING of Liverpool, RIVERS of Sawbridgeworth, etc., where it is extensively grown for timber plantations, it may be purchased in any quantity—the plants one to two feet high—for about thirty shillings, (say seven to eight dollars) per thousand.

Autumn is much the best season for importing evergreens, and we recommend some of our leading nurserymen to import a large stock of the Norway Spruce, of small size, grow it one season here, and offer it for hedges at a moderate rate.—Ed.]

TREES IN GRASS GROUND.—An exchange says, that when trees grow in grass ground, it is well to remove the sod in the fall two or three feet round the tree, and then apply half a wheelbarrow load of manure; the winter rains and snows will wash the

strength of the manure to the roots. Scatter the manure under the tree in the spring, and add leached ashes. This will have a tendency to keep down the weeds and grass; but as when they grow, they will grow strongly, the spade must be kept in use

A FINE NEW SUMMER CLIMBER—THE MANY-FLOWERED STEPHANOTIS.

THE annexed engraving represents a portion of a shoot, showing the leaves and flowers of the new Madagascar climber, *Stephanotis floribunda*, which is, at the present moment, looked upon by amateurs as the greatest acquisition among the floral novelties of the season. "Beautiful in the extreme, and possessing a most delicious fragrance, this fine climbing plant," says the last London Horticultural Magazine, "is admired by all who know it. Its beauty is derived from the contrast presented between the pearly whiteness of its profuse and handsomely formed blossoms, and the deep green hue of its ample and enduring leaves; and this beauty, supported as it is, by a most exquisite fragrance, gives it an indisputable claim to the high estimation in which it is held."

MR. PAXTON, in his Magazine of Botany, remarks, that it is next to impossible to overrate its merits, they are so essentially sterling. Besides having a most elegant climbing habit, it bears dark shining foliage, of a pleasing order, and from the axils of this, the delicate creamy white blossoms are protruded in large umbels. The texture of the flowers being very firm, they last a considerable time, and their odor is exceedingly delicious.

The *Stephanotis* being a native of Madagascar, of course loves a high temperature. Indeed, the English look upon it essentially as a stove or hot-house plant. "One drawback alone," says the editor of the journal first quoted, "is attached to its high recommendations; it is a tropical plant, and must be cultivated in a hot-house."

We are very happy to be able to assure our American readers, that we have, at this moment a fine plant of the *Stephanotis*,

which has been growing in the open border since the middle of May, trained on a frame about eight feet high, which it now fully covers, and that it has been adorned with its charming white blossoms for the last two months.

Although, therefore, there is no doubt that it will grow with perhaps still greater luxuriance in a hot-house, we have no hesitation in claiming, for the open ground in this climate, this fine plant as a decided acquisition to the class of beautiful summer climbers, among which we already number the *Maurandias*, the *Calampetis*, the *Cobeeas*, etc., all rapid growing tropical plants, which when propagated in midsummer or early autumn by cuttings, and the latter kept through the winter in a common green-house and planted after all danger of frost is over, will clamber over trellises, light summer-frames, columns or arches, and cover them with wreaths of foliage and blossoms, from midsummer till late autumn.*

The *Stephanotis* belongs to the natural order *Asclepiadaceæ*, to which the several well known species of *Asclepias*, and the *Hoyas* or *Wax-plants* also belong. It has the milky juice of many of the individuals of this order, but the flowers are larger than is common in the group of plants composing it. The leaves are elliptical, opposite, rather glossy and thick; the umbels or clusters of flowers, are borne on a peduncle or stalk, which springs out of the main stem, from between the bases of the leaf stalks. The flowers are salver-shaped, with the top divided into five segments, and with a cylindrical tube, which is swollen at its base.

* We first saw this plant in high perfection, bearing many thousands of blossoms, last season at the fine residence of S. HOWLAND, Esq., near Greenburgh, Westchester county, N. Y. It was trained under the roof of a winery, where it grew in great luxuriance. From cuttings kindly presented us by Mr. HOWLAND, we raised several plants very readily.

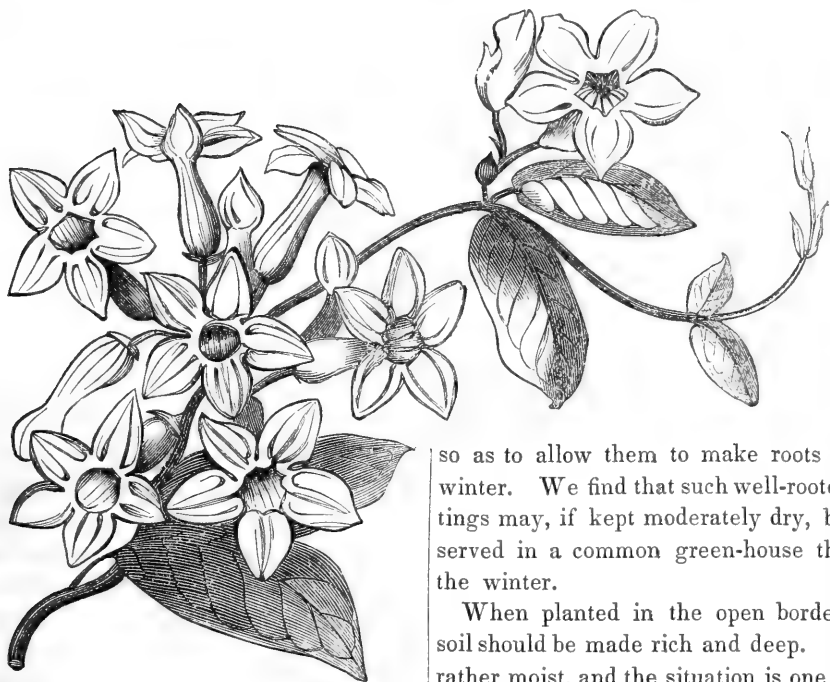


Fig. 24. *The Many-flowered Stephanotis.*

This plant, we find, is propagated with facility, by making cuttings of the ends of the flowering shoots, and planting them in pots of sandy loam, and covering them with a bell-glass, or placing them under a common hot-bed frame, in a shaded situation. When wanted for trellises, etc., in the open border, the cuttings should be planted at any time from July to the middle of September,

so as to allow them to make roots before winter. We find that such well-rooted cuttings may, if kept moderately dry, be preserved in a common green-house through the winter.

When planted in the open border, the soil should be made rich and deep. If it is rather moist, and the situation is one rather warm, and fully exposed, the growth of the plant will be the more luxuriant.

As the *Stephanotis* is a twining plant, when once fairly growing at the foot of fitting supports, it will generally take care of itself; in our hot midsummer weather, it grows quite rapidly. Though yet rare, and seen in only a few choice collections, its beauty of habit, leaf and blossom, added to its perfume, will no doubt soon introduce it to the notice of lovers of fine plants.*

KEEPING CURRANTS AND GOOSEBERRIES.—The *Prairie Farmer* says, that they have, for several years, practised the following mode, by which the “green fruit” may be kept for any length of time, as good as when first taken from the bushes: “Pick them when fully grown, let them be dried

from any dew or rain, and put them into glass bottles, cork the bottles tight, and cover the corks with sealing wax; then cover the bottles partially with sand or earth in the cellar.”

* We observe that Messrs. THORBURN & Co. of New-York, are exhibiting pretty specimens of *Stephanotis floribunda*, in pots, grown at their garden at Astoria, L. I.

HOW TO PLANT STRAWBERRIES.

BY A SUBURBAN GROWER, BOSTON.

THIS is the time for making new strawberry plantations. Although on the whole I prefer the month of April; yet, as it is not always so convenient at that busy season, August planting is often resorted to, and is, especially with the aid of showery weather, a very good time for setting new beds. In fact, I have generally been fortunate with new set beds as late as the tenth of September; always premising that when plantations are made after the first of August, the beds should be covered with straw at the approach of winter.

It seems to me, that the main point in raising the best strawberries, is the condition of the soil in which they are to grow. Now no one is a more ready subscriber to the importance of trenching, for all plants, than the writer. The roots of the strawberry will run deep in deep soil, and the crops will be abundant and fine just in proportion to the extension of the roots, and consequent health and vigor of the plants.

But the manner of trenching which I practise, and ask leave to recommend, is not the common mode. I think, from experience, that in a light mellow soil, like my own, it is superior to the common mode, and therefore must be allowed to say that it is worthy of the attention of any one about planting strawberries.

It may, as compared with trenching in the common way, be called *half-trenching*; and it is performed in this wise. Having marked off the plat of ground which is to be prepared, make a trench on one side of it, by taking off the soil one spade deep along the whole side, and about three feet wide. Carry this in a wheelbarrow and empty it on the opposite side of the plat,

where the trenching is to end. Then cover the earth in the bottom of the trench with a heavy coat of fresh manure or strong compost, and dig the manure under at once. Next begin at the rear of the trench, dig and throw the top soil of the next three feet over on the top of the under layer three feet broad just manured and dug. This will leave three feet width more of new under layer exposed, which manure and dig as before—pursuing this till the whole surface is half-trenched in this way.

This half-trenching doubles the depth of the soil, and invites the roots to run down into the enriched under-layer, while it does not in any way deteriorate the condition of the surface of the ground, as is often the case in many soils where whole trenching is executed, and the bottom spit is turned up and left upon the top.

The plan of growing strawberries which I prefer, is that of the *alternate strips*, described very plainly in your *Fruits and Fruit Trees*, p. 522. I like it best, because it costs me the least amount of care and labor, and gives me large crops of fruit. I plant the strips three feet wide, and leave a space of three feet between. As I allow the plants to cover and take entire possession of the three feet strip allotted to them, I both get a larger crop, and at less labor of weeding, etc., than can be had when the plants are shorn of runners. As soon as the planted strips have given me one full crop, I dress the open strip, and allow the runners to take full possession of it. This done I spread a coat of compost and ashes over the old strip of plants, turn them under with the spade, and allow it to lie fallow for a year, to take its turn afterwards again.

By half-trenching the ground before planting out strawberries, as I have just explained, I find that my crop of strawberries is certain in years when those in untrenched ground prove a partial failure, and that moreover the berries are uniformly larger and higher flavored.

The kinds of Strawberry which I cultivate and approve most are, 1st. *Large Early Scarlet*, as valuable for its earliness and excellence; 2. *Hovey's Seedling*, among the best of the large berries: 3. *Boston Pine*, an excellent fruit; and 4. the *Old English Red Wood*, one of the greatest bearers, and most delicate flavored, and which bears much later than any other.

Notwithstanding what your correspondent, Mr. LONGWORTH, and others say to the discredit of *staminate* varieties, I know from experience, that some *staminate* sorts, and

among them the *Boston Pine*, bear excellent crops with the culture I have pointed out. It is probable enough that in a rough way and left to itself, it may not yield so heavily as pistillate sorts will with the same *neglect*; but as I have, with half-trenching, raised a better crop of it than some of my neighbors have of *Hovey's Seedling*, and as I prefer the flavor of the *Boston Pine*, I shall not give it up on account of the present clamor against strawberry plants that bear stamens.

I find that pistillate sorts, like *Hovey's Seedling*, when planted in alternate strips with the *Large Early Scarlet*, are always well fertilized without any admixture of staminate in the same strips with themselves. I am very respectfully yours, etc.

A SUBURBAN GROWER.

Boston, Aug. 2, 1847.

ON TRANSPLANTING EVERGREENS.

BY ANDREW SAUL, HIGHLAND NURSERIES, NEWBURGH.

WHICH is the best season of the year for transplanting evergreens? is a question almost daily debated, and as there are some persons who have succeeded in getting evergreens to live, when transplanted at this season (August,) who previously failed in spring planting, they arrive at the conclusion that August is the best season for transplanting evergreens.

While we are perfectly satisfied that evergreens can be transplanted in August, or indeed at almost any other season of the year so as to live and thrive afterwards, yet experience has satisfied us that the spring is, all things considered, the best season for performing that operation in this climate,

In the first place, in many evergreens, the young wood and foliage is in a more

immature state, and it requires great care to preserve their respiratory organs, which are always in more active operation in the warm summer months, than in the cooler spring months, after being transplanted, by shading, watering, etc. And in the next place rains are less prevalent in August than April, while from the great evaporation going on in the high temperature of mid-summer, moisture in a hundred-fold more is required.

The fact of a person succeeding in making a tree live by moving it in August, when he had previously failed to make the same kind of tree live by transplanting it in April, does not prove the former to be the better season for transplanting. Generally persons transplanting in spring bestow

no more pains on evergreens than on the hardest forest tree; while persons undertaking to transplant evergreens in summer, (say August,) bestow unusual care: in the first place they have them taken up with all the care possible, and have them planted in the same manner, and they also pay unusual attention to the after treatment in shading, watering, etc., should the season require it.

We speak of the month of April, that month being the season at which the growth in evergreens commences in this latitude. Farther south, March would correspond, and farther north May. This point, however, is most important: that evergreens are moved with the most success in the northern half of the Union, when lifted just at the moment their buds are *beginning to swell*, or in other words, just as vegetation has commenced. If taken before this time, while the tree is quite dormant, success is not so certain, for evergreen trees do not possess the same vital energy to commence pushing out new shoots after being disturbed by removal, that deciduous trees do. On this account many experienced planters prefer delaying the transplanting of evergreens till they have fairly started into growth—say of half an inch to an inch at the ends of the shoots. And we must confess that we have had excellent success in removing them as late as May, and when they were considerably advanced.

We are satisfied that the same amount of

care bestowed in transplanting a given number of evergreens in April, about the time they first show symptoms of being excited into growth, and just before the buds are developed, that is bestowed upon a like number of trees moved in August, that in nineteen cases out of twenty, success will be greater at the former season of the year, than at the latter. We cannot but think an evergreen tree in April, is in a better condition to be moved, than it possibly can be in August, when, instead of the earth being moist, it is hot and dry; the probabilities of a damp atmosphere, after transplanting, are much greater, too, in spring than midsummer. Every planter is well aware that upon the favorable continuance of cloudy weather even more than rain itself, depends the emission of roots by newly moved evergreens.

Transplanting in winter, with frozen balls of earth, is a well known and very capital mode of moving large specimens of evergreens. It requires time and patience and the co-operation of several hands and a sled with a pair of horses or cattle, etc.; but as trees skilfully removed in this way, suffer but very little by the removal, and as they may be made to produce considerable effect immediately, it is a mode deserving the attention of all ornamental planters. Sir HENRY STEWART's advice of choosing trees that stood naturally in an *exposed or open site*, if attended to; will greatly add to the certainty of rapid growth: A. SAUL.

RHUBARB OR PIE PLANT POISONOUS.—We have noticed several instances mentioned in our exchange papers, of individuals being dangerously taken sick after having eaten the leaves of the Rhubarb plant cooked as greens. A late English paper also gives

a case where severe sickness was incurred by eating tarts made of the swelling buds. The presence of oxalic acid, which is a strong poison, in the leaves, is said to be the cause. No part of this plant, therefore, should be used but the stems of the leaves.

REVIEWS.

THE CULTURE OF THE GRAPE: *embracing directions for the treatment of the Vine in the Northern States of America, in the open air and under glass structures, with and without artificial heat.*
By J. FISK ALLEN. Boston. 8vo. pamphlet, 55 pages. Price 37½ cts.

HERE is a modest unpretending pamphlet, which we look upon as a most valuable contribution to our stock of knowledge on the subject of grape culture.

When a person writes a *pamphlet* on a subject that might have been extended to a whole volume; when he bears in mind that his subject is one of purely practical importance, and accordingly conveys his ideas in the simplest and plainest terms; when, in short, the whole performance shows that he writes solely because he feels that he has something valuable to communicate, we are inclined to look upon his pages with far more respect and attention than upon those, much more common, of the author ambitious of making a *book* at all hazards.

The culture of the grape under glass may be said to be one of the nicest points in horticultural practice. Not, indeed, that it is difficult or mysterious *when once understood*. On the contrary, there is no crop of fruit produced in America with so much certainty, so uniformly fine, as are the *tons* of delicious foreign grapes borne every year in certain well known vineries about Boston. But the phrase, "when once understood," means something in the culture of the foreign grape; for it is almost the only fruit of the temperate zone that exacts an artificial climate in the United States. Both observation and experience are demanded, to insure uniform success; and there are many cultivators just commencing in this country, who, in the absence of both, will

gladly avail themselves of Mr. ALLEN's as here presented.

This gentleman's success in the production of the finest fruit is almost a proverb at Boston, where are our best growers of the grape. He has not only carefully examined the vine culture abroad, but he has experimented perhaps more extensively than any American, at his residence at Salem, Mass., with all the different modes of culture, and with a great variety of glass structures. He has collected and proved all the most celebrated kinds of foreign grapes, often, as we know, importing a rare kind from four or five different sources before getting the genuine variety. In this way, Mr. ALLEN has introduced, proved and disseminated with liberality, several valuable sorts, previously unknown in our collections, and for which pomologists owe him many thanks.

The following prefatory remarks show the aim of the essay before us:

"The attempt has been made to give plain rules, which may be easily understood, and the practical operation of which can be carried out with as little labor as the cultivation of the grape, under glass, will permit.

"The following directions are intended for those who may desire to cultivate this fruit for their own pleasure or convenience, who do not wish to incur the expense of a regularly educated gardener, and who have felt the want of a concise and simple explanation of the process, and the rules by which these operations of forcing and growing grapes, under glass structures, can be carried out.

"The treatment recommended is such as has been found to be the best, after many

years' experience in its cultivation ; during which time, the different systems of pruning have all been tried, and many of the vineyards in France and on the Rhine, in Italy and other countries, have been visited, and and the manner of pruning, the varieties of soil, and the amount of fruit which a vine is permitted to ripen, have been examined and ascertained.

"The disadvantages we labor under in this country, in forcing fruit, from the extreme coldness of the weather in winter, are counterbalanced, in some degree, by the superior brilliancy of the sun, and consequent dryness of the atmosphere at the time of ripening, which give a flavor to the fruit such as it can rarely be made to attain in the moist, dull and cloudy weather of England."

Mr. ALLEN's pamphlet, it will be remembered, is intended chiefly for the use of those having *vineries*. His directions for the culture of grapes out of doors are very brief, and of comparatively little moment. But he treats of the culture of grapes under glass systematically, and though with brevity and conciseness throughout, yet in a way best calculated to instruct the novice in vine culture. The construction of the *grapery*, the preparation of the border, and planting the vines, are first explained ; then the routine of pruning and management in the *cold-house*, (or *vinery* without fire-heats,) is considered; this is followed by the details of a forcing *vinery*, then that of a *retarding house*, and the work closes with an explanation, with cuts, of different modes of pruning and training the vine.

"For a cold house," Mr. ALLEN recommends the following selection of varieties :

Black Hamburgh,
Rose, or Red Chasselas,
Chasselas de Bar sur Aube,
White Frontignan,
Grizzly Frontignan,
Pimastou White Cluster,

Golden Chasselas,
White Gascoigne,
Royal Muscadine,
Wilmot's New Black Ham-
burgh.

"For a forcing house:"

Black Hamburgh,
Rose, or Red Chasselas,
Chasselas de Bar sur Aube,
White Frontignan,
Grizzly Frontignan,
Black Frontignan,
Pimastou White Cluster,

Golden Chasselas,
White Gascoigne,
Royal Muscadine,
Wilmot's New Black Ham-
burgh,
Muscat of Alexandria,
Zinfandel.

Brief descriptions are given of forty or fifty other varieties cultivated by Mr. ALLEN.

The author's mode of preventing mildew is to strew sulphur early in July, over the floor of the house, at the rate of one pound to every twenty square feet. This may be repeated twice every summer. The sulphur is by no means allowed to touch the fruit, but if necessary the vines are syringed at evening, and the *foliage* dusted with it.

As we predict that this timely little treatise on the grape will speedily be in the hands of every cultivator of the foreign vine in the country, we will not do more at present than cordially recommend it as well worthy their attention.

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AGRICULTURAL BOTANY: *An enumeration and description of useful plants and weeds, which merit the notice, or require the attention of American Agriculturists.* By WILLIAM DARLINGTON, M. D. Philadelphia, J. W. Moore ; New-York, Newman & Co. 12mo. 270 pp.

DR. DARLINGTON, already well known as a botanist, has, in this compact little volume, endeavored to widen the interest, and give a higher meaning to the life of the farmer, by adding to his knowledge of that portion of the vegetable kingdom which comes under his observation every day of his life. It should, to a reflecting mind, appear singular that most farmers pass their whole lives in comparative ignorance of the names and properties of half the trees and plants that surround them ; yet we fear, such would prove to be the lamentable fact to a curious investigator.

DR. DARLINGTON considers some rational knowledge of the vast and multifarious vegetable creation around indispensable to a rightly instructed people. He has, therefore, dedicated this volume to the young

farmers of the United States. "I address myself," he observes, to the youthful and aspiring agriculturists of the country, who seek to elevate their noble profession to its first rank among human pursuits; and who feel that the exercise of *intellect*, as well as of muscle, is indispensable to the accomplishment of their purpose."

This volume of Agricultural Botany may be considered a pocket manual for the farmer, who desires to make himself acquainted with all the principal trees, shrubs, cultivated plants, wild plants and weeds, within his usual range. The author declares it as his intention, in this work, not to describe all the plants that an accomplished agriculturist would wish to know, but to "include those only of which no intelligent farmer would willingly be ignorant."

The arrangement of the work is according to the natural system. It differs mainly from other botanical manuals, in having, besides the scientific description of each plant, some remarks of a popular character relating to its habits, mode of culture, its introduction if naturalized, or perhaps the means of subduing it if a troublesome weed, all of which is written with the sagacity, spirit and observation, which we should have expected from the author.

.. ..

CHEMISTRY in its applications to Agriculture and Physiology, by JUSTUS LIEBIG, M. D., F. R. S., Edited by LEON PLAYFAIR, Ph. D., and Dr. WM. GREGORY. From the fourth London edition, revised and enlarged. New-York. Wiley and Putnam. 12mo. 401 pp. 75 cts., or bound in muslin \$1.

It is quite unnecessary that we should enter into any laudatory criticism of this remarkable work, which has made for its learned and scientific author so wide a reputation. It is sufficient to say that its publication commenced a new era in scientific agriculture, begot a whole series of volumes on

rural chemistry, which are, for the most part, indifferent imitations, and is at the present moment the text book of almost every zealous experimenter in the culture of the soil. Success so great, in any walk, always excites open opposition, and not unfrequently violent detraction from those of the old rank and file, who find themselves eclipsed by the glories of the new leader. LIEBIG and his views have accordingly been assailed, both in Germany and England, with no little severity. While these attacks have not in the least weakened the author or his works in popular favor, they have, very properly had an influence upon some points of doctrine originally advanced by the distinguished Professor at Giessen. The following remarks, from the preface of the present volume, will therefore be read with interest:

"Many views and principles which I had endeavored to develop in reference to nutrition, and especially to the cultivation of vegetables, were strongly opposed, immediately on the first appearance of this work. I could not, however, resolve to make any material change in the immediately succeeding edition, because I did not consider the scientific investigation of the important questions at issue as completed, and because I thought that I ought to trust the decision of them to experience alone.

"Many of the objections were founded on a want of mutual understanding; others related to positions and assertions having no connexion with the peculiar objects of the book. I have set these aside by the omission of all passages thus called in question.

"In the three years which have elapsed between this edition and the first, I have not neglected any opportunity of subjecting to a rigorous and careful examination the principles which I had developed of the

nutritive properties of plants, and their application to agriculture. I have endeavored to make myself acquainted with the condition of practical farming, and with what it requires, by a journey through the agricultural districts of England and Scotland; and during this interval a long series of experiments were carried on in the laboratory of this place, with the sole object of giving a firmer basis to my exposition of the causes of the advantageous results attending the practice of rotation of crops, and also of effectually banishing all doubts concerning their accuracy.

"In my 'Chemistry in its application to Physiology and Pathology,' I have subjected the process of nutrition of the animal organism to a stricter investigation; and I am now, for the first time since the completion of these labors, in a situation to give a simple and determinate expression to my view of the origin of animal excrements,

and of the cause of their beneficial effects on the growth of all vegetables.

"Now that the conditions which render the soil productive and capable of affording support to plants, are ascertained, it cannot well be denied, that from chemistry alone further progress in agriculture is to be expected."

The present volume is not only considerably revised and amended, so as to bring it down to the latest period of chemical progress, but it contains also an appendix exhibiting the analysis of a large number of different plants and soils, adding very materially to its value.

Messrs. WILEY and PUTNAM have published the work in so convenient, excellent and cheap a form, that no intelligent landholder in the country, who desires to know something of the mysteries of growth, nutrition and decay of the vegetable kingdom, has the least apology for not possessing it.

FOREIGN NOTICES.

ITALIAN HORTICULTURE.—*Palermo, April 8.*—After the many evidences of carelessness, neglect, and idleness, which the gardens, as well as many of the cultivated grounds, about Naples, afforded, it was a great relief to come here, where if full advantage is not taken of the facilities afforded by the climate, some gardens at least show taste, care, and industry; and the richly cultivated vale of Palermo, as well as the five basins round the bay of Castellammare, would give a most favorable idea of the state of agriculture in Sicily to the stranger who saw nothing but this neighborhood. The climate is particularly favorable; the thermometer never descends quite to the freezing point; the great heats of summer are somewhat modified by the northern exposure, the sea-breezes, and the high hills which close the vale to the south. Drought is what they suffer most from, but there are many springs and small streams in the hills, and they have inherited from the Moors not only the art of irrigation, but also several important aqueducts and water channels, constructed for the purpose by that industrious race. The soil is of itself not rich, and often of very little depth. The rock is all calcareous, but the earth generally very stiff, and, with the hot sun, bakes almost like brick. However, where there is water, vegetation is most luxuriant, and the

Orange especially thrives in such situations, whilst the drier parts are equally well suited to the growth of the Olive, the Sumach, and the Indian Fig; the latter shrub, if so one may call the singularly shaped masses formed by the *Opuntia*, is one of the most productive crops of the country, and often covers the lower parts of the warmer declivities of the hills, or intersects the hot flats at their foot, with a network of thick rows, giving, with the Agaves in the hedges, a singular character to the views. The plants vary from two or three to eight or ten feet high, or seldom more. There are two varieties almost equally common, the one covered with prickles, the other generally, but not always, almost entirely without; they do not appear to differ in any other respect; there are also varieties in the color of the fruit. The buds are in some places now beginning to appear, thickly studding the extreme articulation of the plant, and when the fruit is fully formed, it is said to be so abundant as completely to conceal the articulation on which it grows. It is always eaten raw; tastes a good deal like the common Fig, but with less flavor; it is, however, more nutritious, and forms, indeed, in many parts of Sicily, for two or three months, the sole food of the lower orders. It is not exported excepting to Naples.

The Sumach (*Rhus coriaria*,) is another very

productive article, and cultivated to a great extent. It has the advantage of thriving in the most arid, burnt up situations, cannot bear wet, and requires little labor beyond the digging the ground once or twice in the year to keep it from being choked by weeds. It is now beginning to shoot, having been pruned down to six inches or a foot from the ground. It grows up every year to the height of three or four feet, and when in full foliage, the leaves and young shoots are gathered and dried for use. The produce is partly consumed in the local tanneries, partly exported. The Olive trees form an important feature in the landscape, and at once indicate the extent of the dry parts of the valleys. But individually they are not fine, apparently from bad pruning and want of care. The Oranges and Lemons, on the contrary, in all parts of the vale where there is irrigation, are very luxuriant; and looking down from the heights of Monreale, for instance, nothing can exceed the rich look of the Orange grounds, forming a deep green mass, sometimes of miles in extent, here and there tinged with gold where the fruit is still on the trees, and the effect of the whole is improved by the Walnut trees, (as yet leafless,) projecting here and there far above the general level.

The great exportation of the fruit is for North America, from whence there are often eighteen or twenty vessels at once loading with them in the harbor. The Palermetan Oranges in general are good, much better than the Neapolitan, but often inferior to the Maltese and Balearic ones. I have here for the first time eaten good mandarines, about the size of a fine common Orange, but having a considerable vacuity between the rind and the endocarp. They are very sweet and good flavored, and the cells separate so easily that they are very agreeable to eat, but will not bear exportation. The Vines here are cultivated more in the French than in the Italian manner—pruned short and tied to stakes, and a good deal of care is taken in the working the ground. The result is, the common wines are fit for drinking, which they scarcely ever are in Italy. The Caroub (*Ceratonia siliqua*) is not much planted in this neighborhood, though it thrives well and produces abundantly; but in some places on the south coast, there are villages which make it almost their sole revenue, and export it in great quantities. Mulberries for silk are scarce and much neglected, though the situation appears well suited to them, and I am told, that endeavors are now making to extend and improve their cultivation, and the rearing of the silkworm. There are a good many fruit trees, chiefly Figs, Walnuts, Almonds, and Peaches, and a very few Pistachio nuts. I have not observed the Jujube; the Date trees are very few, and can only be planted for ornament, for although it flowers freely, and never freezes, yet the fruit does not come to perfection. Forest trees are only to be met with in ornamental plantations, for the hills around the vale have long been deprived of their primitive woods, and it is with great difficulty that an evergreen Oak or a Quercus pubescens may here and there be found as a shrub among the rocks. The flowering Ash (*Frazinus ornus*) which is indigenous, may sometimes be seen, and is here and there cultivated for manna, but not much in this

immediate neighborhood, though in other parts of the island it is said to be sometimes an article of importance. With all this arboreous and frutescent cultivation, and the numerous kitchen gardens in the vicinity of the town, little room is left in the vale of Palermo (containing certainly above fifty square miles) for meadows or for grain; indeed, what are called meadows are scarcely entitled to the name. They are usually a weedy looking mass, chiefly Lotus ornithopodioides, ululis and biflorus, a few Medicagos, Vetches, and other Leguminosæ, intermixed with a very few Gramineæ, and a number of miscellaneous plants, very beautiful to the eye now that their herbage is green, when not completely hid by the mass of bright-colored flowers, but which a day or two's sirocco is enough to wither up, and are at the best but of small produce. The best pastures where horses and cattle are reared are in the interior, and towards the south of the island. The grain of the vale of Palermo is chiefly in small patches, scattered over the lower parts, and extending up the sides of the hills up to the very tops, either on the northern sides or where the soil lies deep, in many places in acclivities so steep that they must be entirely cultivated by hand, and where the soil would never remain without terracing, were this part of island exposed to the torrents of rain which deluge the eastern portion in the season of storms. There are, however, some broad valleys in this part of Sicily entirely occupied by arable land; we crossed one between Alcamo and Segestha, where the crops looked clean and healthy; the chief kinds cultivated are Wheat and Barley, with a little Rye and Oats, Beans in great quantities, a few Peas and Lentils, large fields of Lupins, but they are chiefly as in Catalonia, sown on the fallows to be ploughed in. They grow to the height of three or four feet, but are very little used as fodder (for which they are chiefly cultivated at Naples.) They, as well as the Peas and Beans, are frequently infested by the Orobanche pruinosa, called by the Sicilians Lupa, a very handsome sweet-scented species, growing as tall as the Lupin, which it generally kills. It is precisely the same as in Catalonia and Roussillon, where Lapeyrouse first described it. Flax is grown to a great extent in all the valleys, and there are more green crops raised for forage than in those parts of Italy I have seen, especially the Hedysarum coronarium now coming into flower, giving to the sides of some hills a beautiful crimson hue, whilst others are tinged with the rich orange of the Lotus biflorus. Kitchen garden culture in the vale of Palermo is very good, and the mode of irrigation is the same as in Roussillon and Catalonia, probably in both countries handed down from the Moors. The vegetables now selling are chiefly artichokes in immense quantities, which the lower orders buy ready boiled in the streets, Endive and Cos Lettuce, Cabbages, chiefly a kind of Turnip-rooted, not exactly the Kohl-rabi, but one with the lower part of the petioles and stalk thickened like Celery or Finocchio; this Cabbage, as well as Lettuces, is much eaten by the people in the streets raw; Finocchio is also still plentiful; and Beans and Peas are already abundant; what we have eaten of the two latter have been generally fine and good; the low-

er orders usually eat them ripe and roasted, and of course those now selling are last year's. The Broad Beans selling ready roasted in the streets are as large as our finest Windsor Beans. French Beans are much grown, but are still very young; Potatoes have also, within the last few years, been much cultivated, and eaten by the peasantry. From all I can hear, the disease, which has spread more or less over the greater part of Italy, has not reached Sicily, at least not to sufficient extent to attract notice, but the Potatoes we have eaten have not been good. *Gardener's Chron.*

.....
GIANT SEA-WEED.—"There is one marine production, which from its importance is worthy of a particular history. It is the kelp or *Fucus giganteus* of Solander. This plant grows on every rock from low-water mark to a great depth, both on the outer coast and within the channels. I believe, during the voyage of the Adventure and the Beagle, not one rock near the surface was discovered, which was not buoyed by this floating weed. The good service it thus affords to vessels navigating near the stormy land is evident, and it certainly has saved many a one from being wrecked. I know few things more surprising than to see this plant growing and flourishing amidst those great breakers of the Western Ocean, which no mass of rock, let it be ever so hard, can long resist. The stem is round, slimy and smooth, and seldom has a diameter of so much as an inch. A few taken together, are sufficiently strong to support the weight of the large loose stones to which, in the inland canals, they grow attached; and some of these stones are so heavy, that, when drawn to the surface, they can scarcely be lifted into a boat by one person.

"Captain Cook, in his second voyage, says, that at Kerguelen Land, 'some of this weed is of a most enormous length, though the stem is not much thicker than a man's thumb. I have mentioned, that upon some of the shoals on which it grows, we did not strike ground with a line of twenty-four fathoms. The depth of water, therefore, must have been greater. And as this weed does not grow in a perpendicular direction, but makes a very acute angle with the bottom, and much of it afterwards spreads many fathoms on the surface of the sea, I am well warranted to say that some of it grows to the length of sixty fathoms and upwards.' Certainly, at the Falkland Islands, and about Terra del Fuego, extensive beds frequently spring up from ten and fifteen fathom water. I do not suppose the stem of any other plant attains so great a length as 360 feet, as stated by Captain Cook. The geographical range is very considerable; it is found from the extreme southern islets near Cape Horn, as far north, on the eastern coast (according to information given me by Mr. Stokes) as lat. 43°—and on the western it was tolerably abundant, but far from luxuriant, at Chiloe, in lat. 42°. It may possibly extend a little further northward, but is soon succeeded by different species. We thus have a range of 15° in latitude; and as Cook, who must have been well acquainted with the species, found it at Kerguelen Land, no less than 140° in longitude.

"The number of living creatures, of all orders,

whose existence intimately depends on that of kelp, is wonderful. A great volume might be written, describing the inhabitants of one of these beds of sea-weeds. Almost every leaf, excepting those that float on the surface, is so thickly incrustated with corallines as to be of a white color. We find exquisitely delicate structures, some inhabited by simple hydro-like polypi, others by more organized kinds, and beautiful compound Ascidæ. On the flat surfaces of the leaves, various patelliform shells, Trochi, uncovered molluscs, and some bivalves are attached. Innumerable crustacea frequent every part of the plant. On shaking the great entangled roots, a pile of small fish, shells, cuttle-fish, crabs of all orders, sea-eggs, star-fish, beautiful Holothuriæ (some taking the external form of the nudibranch molluscs,) Planariæ, and crawling nereidous animals, of a multitude of forms, all fall out together.

"I can only compare these great aquatic forests of the southern atmosphere with the terrestrial ones in the intertropical regions. Yet, if the latter should be destroyed in any country, I do not believe nearly so many species of animals would perish, as, under similar circumstances, would happen with the kelp. Amidst the leaves of this plant, numerous species of fish live, which nowhere else would find food or shelter; with their destruction, the many cormorants, divers, and other fishing birds, the otters, seals, and porpoises, would soon perish also; and lastly the Fuegian savage, the miserable lord of this miserable land, would redouble his cannibal feast, decrease in numbers, and perhaps cease to exist."—*Darwin's Journal of the Voyage of the Beagle.*

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GREAT MEXICAN CACTI.—There are three specimens of *Cereus senilis*, from Real de Morte, in the Royal gardens at Kew, near London, which measure 12 feet, 16 feet, and 18½ feet in height. Since small plants of this species are known to be from twenty to twenty-five years old, and since the growth of these plants in Mexico is exceedingly slow, there is good reason for believing that these monster specimens are some hundreds (perhaps a thousand) years old.

.....
THE FLOWER SHOW AT CAMBRIDGE.—The late London papers are full of the ceremonies of the visit of the Queen to Cambridge, and the installation of Prince Albert as Chancellor of the University. Among other entertainments on the occasion, was a brilliant horticultural exhibition in the grounds of one of the colleges, the following brief notice of which we copy from the *Illustrated London News*. "The flower show, in the beautiful grounds of Downing College, was a delightful relief to the indoor ceremonies.

About nine spacious tents were erected in different parts of the grounds, within which the flowers and plants were arranged; military bands played for the entertainment of the company; seats were placed beneath the trees for those who were disposed to seek temporary repose or shelter from the rays of the sun; and many who could not obtain seats, stretched themselves on the grass, forming, as they were seen from various points, Watteau-

like groups. A portion of the grounds, extending from the lodge shrubbery to the Royal tent, had been railed off for the exclusive accommodation of her Majesty and suite. The rest of the grounds were at the disposal of the visitors. Five thousand tickets had been distributed. The whole were eagerly bought up, and vast numbers were disappointed. The spacious and picturesque enclosure, resembling the grounds of a baronial mansion, was crowded throughout the *fete*. Her Majesty and the Prince were received at the lodge by the Master of Downing, and entered the grounds by the southern facade. The Queen and the Prince then proceeded to the royal tent, which was most gorgeously decorated with gold and crimson. After partaking of some refreshment, the royal visitors, attended by Mr. Ashton, secretary to the Horticultural Society, visited each tent, in which flowers were displayed. The pressure was, at this time, very great; the Duke of Wellington got into the middle of the crowd before he was recognized, and was much inconvenienced. After remaining in the grounds about three quarters of an hour, and accepting a beautiful bouquet from Mrs. Ashton, her Majesty, Prince Albert, and the whole of their suite, withdrew into the house of the Master of Downing College, when the Queen was pleased to express her gratification at what she had seen. The royal party then left for the Fitz-William Museum, and afterwards attended the banquet, at half past six o'clock, at the great hall in Trinity College."

.....
ENORMOUS PEAR.—M. Calle, of Brionne, has drawn our attention to a print of the *Belle Angévine* Pear, a variety, * the extraordinary size of which has already attracted the attention of horticulturists. M. Calle has produced on one of his trees a specimen which, in its dimensions, fully equal any of those we have heretofore cited. This fruit weighed 2 lbs. 15 oz. avordupois; and measured more than 13 inches in circumference by nearly 8 inches in height.—*Revue Horticole*.

.....
MALAGA RAISIN VINEYARDS.—At day-break this morning, a gentleman, whom Mr. Kirkpatrick requested to show me his vineyard, and explain the process of preserving grapes, waited upon me, and we set out immediately. Our road lay along the shore to the eastward, the vineyard of Don Salvador Solier lying in that direction, at the distance of about 14 miles. In the immediate vicinity of Malaga, the country is extremely rugged, but every patch where it was possible to thrust in a plant was under cultivation. The rocks consisted of rugged masses of limestone, alternating with the same kind of slaty schist I had previously observed on the road from Antequera. For the first two leagues, there were few vineyards, chiefly owing to the ruggedness of the country, which would not admit of cultivation. Beyond that distance almost every hill was covered with vines, the produce of which is all converted into raisins. The grapes are all of the large white Muscatel—the Muscatel Gordo of Roxas Clemente. This grape, my companion informed me, does not succeed in the interior, and, therefore, all the Muscatel raisins are made with-

* Fit for cooking only.—ED. HORT.

in two leagues of the coast. The Lexia raisins, which are used for puddings, &c., are made in the interior. We arrived at the country house of Don Salvador at nine o'clock, and, after a substantial breakfast, sallied out to examine the vines. Six or seven workmen were employed in preparing the ground for planting, within a short distance of the house. They did not trench the whole of the ground, but dug out square holes, about two feet in diameter and not more than 20 inches in depth. The distance of the centres of these holes from each other is seven feet, and this is the distance at which the vines on the hills round Malaga seem invariably to be planted. The vineyard I was examining, as well as all those in its vicinity, consisted of a series of steep hills. The soil everywhere was a decomposed slate, mixed with abundance of gravel of the same substance. On the higher part of the ground, this soil appeared rather hard and required great labor to break it up, but once broken up it is loose forever; so much so that it slides away from under the feet even where there is only a slight slope. There is no difference made in the distance at which the vines are planted, between the hills and the valleys; although in many places on the former, the shoots scarcely extend more than 10 or 12 inches, while in the valleys they extend to the length of as many feet. They never, under any circumstances, manure these vineyards; they say it would give more wood but would not add to the quantity of the fruit. The branches are pruned closer to the stock than those of any vines I ever saw; nothing but the half-formed buds, at the junction of the old and new wood, being left to produce the wood of the succeeding year. I could not find an instance where the spur had been left long enough to include the first full-formed bud, which is generally from half an inch to an inch from the junction. The number of shoots seemed almost unlimited; I counted from ten to twenty-two; there was scarcely any vine had fewer than 10, and they generally had from 12 to 15. The stock was close to the ground, and not the slightest effort made to raise the shoots, or support them from the ground. Almost every bunch would, therefore, lie on the ground; and were the soil of a less gravelly description, the greater part would, without doubt, be lost. After the pruning they dig over the ground and lay bare the stock, in order to scrape off the barbe, or small thread-like roots which are near the surface. As scarcely any grass or herb vegetates among these vines, and the soil is always sufficiently loose, it is evident that they require little digging or cleaning. We went out to visit a peasant, a neighbor of Don Salvador's. He said four or five very fine vines might yield raisins enough to fill a box which contains an arroba of 25 lbs.; but throughout the country it would require, on an average, nine or ten. The grapes lose about two-thirds of their weight in drying; this would, therefore, give a produce of 7 or 8 lbs. of grapes to each vine—a calculation which I should think must include a much greater proportion of stunted vines than of luxuriant ones; for the majority of those in Don Salvador's vineyard would, I have no doubt, yield double that quantity. Including, however, those vines which are visible at the tops even of the highest hills, the

calculation is likely enough to be correct. The grapes, when dried, are worth double what they would yield made into wine, unless spoiled by the rain.

They usually commence gathering the grapes about the middle of August, choosing only such bunches as are ripe. They return after a week or two to make another selection, and so on for a third and fourth time. A place is always reserved in the vineyard, free from plants, on which to spread the grapes when gathered; and they choose a spot where the soil is of the darkest color, in order to its keeping the full force of the sun's rays during the day, and retaining the heat during the night. The bunches are spread out separately on the ground, and never allowed to press upon each other: according to Don Salvador, they are only once turned over. At the end of 15 days they are, in general, sufficiently dry. This season was more unfortunate for the early commencement of the rains, than any season for many years, and the crop was remarkably fine. It is Don Salvador's intention in future years, to have wooden toldos, or awnings, prepared to shelter the grapes, while drying, against the rains, and also to cover them during the night. He says that the drying of the grapes is so much retarded by their being exposed to the dews during the night, that when he has the means of covering them at night, he expects they will be dried in half the time usual at present. Before the bunches are spread out, the small grapes are picked out, as well as any which may happen to be injured; the small grapes are dried separately. I saw a heap of them in Don Salvador's house, which had the appearance of very large currants. When the grapes are turned, any spoiled ones are, or ought to be picked out; they have no particular rule for judging when they are sufficiently dry—it is learnt by experience. When they happen to get rain while drying, the stalks become black or rusty looking, instead of being of a bright light brown. According to Don Salvador, the district which produces the Muscatel grape extends only two leagues farther east; that is, not more than three leagues in all, along the coast, and two leagues inwards. He says the value of the land planted with it is about 3,000 rials, or 150 Spanish dollars per fanega.—*Busby's Vineyards of France and Spain.*

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ITALIAN FLOWERS.—I have been taking a series of beautiful rides in the *Campagna*. I wish very much to preserve, if possible, some record of the various features of that vast, wonderful plain,—but words multiplied to weariness can hardly express one tithe of the loveliness and sublimity that the eye sweeps over in a minute on that enchanted ground; and first, we come upon some point of it where it spreads out before us a wide, flat expanse, hazy and unbroken as a summer sea, over whose level surface whole companies of larks trill, and twitter, and twinkle, with a perfect chorus of jubilant song, of which our lonely field singer gives not the faintest conception. It is very curious, by-the-by, the fuller life to which all things seem ripened by this southern climate. Not only do the larks appear in perfect cohorts over these sunny plains, and sing with a loud clearness, unequalled, certainly by our solitary bird; but the same sort of differ-

ence manifests itself in *flowers* common to both countries. The daisies here have a wide awake determined air, which would make Burns' address to them absolutely ironical; their buds are of the deepest crimson, their flowers are of the most unhesitating white, with little stiff-necked stalks, and faces all turned up to the sky with a degree of self-possession quite astonishing in a mere daisy. The China roses have all a much deeper color, and stronger perfume than with us. I saw one to-day; a bird sitting under some fresh taper polished green leaves, beneath which a single ray of the sun darted upon a passionate-colored crimsoned flower, that sat beneath its canopy, in an atmosphere of living light, and glowed in a sunshine all to itself, like a jewel; I never saw such a magical effect of color in my life. Then too, the violets here could never, even by the most courteous device of poetry, have been celebrated for their modesty; from fresh vigorous tufts of veined leaves they shoot long slender stalks, with deep colored red-purple blossoms, in absolute sheaves—not low down—not nestling in the shade—not shrinking into moss and retirement; but looking, as every thing here seems to do, towards the sun, and opening their sweet bosoms to the warm air, that at noon in our little terrace garden was full of their perfume.—*Mrs. Butler's Year of Consolation.*

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A PERUVIAN PARADISE.—The favorite residence of the Incas was at Yucay, about four leagues distance from the capital. In this delicious valley, locked up within the friendly arms of the Sierra, which sheltered it from the rude breezes of the east, and refreshed by gushing fountains and streams of running water, they built the most beautiful of their palaces. Here, when wearied with the dust and toil of the city, they loved to retreat and solace themselves with the society of their favorite concubines—wandering amidst groves and airy gardens that shed around their soft intoxicating odors, and lulled the senses to voluptuous repose. Here, too, they loved to indulge in the luxury of their baths, replenished by streams of crystal water which were conducted through subterranean silver channels into basins of gold. The spacious gardens were stocked with numerous varieties of plants and flowers, that grew without effort in this temperate region of the tropics; while parterres of more extraordinary kind were planted by their side, glowing with the various forms of vegetable life skillfully imitated in gold and silver. Among them the Indian corn, the most beautiful of American grains, is particularly commemorated; and the curious workmanship is noticed, with which the golden ear was half disclosed amidst the broad leaves of silver, and the light tassel of the same material that floated gracefully from its top. If this dazzling picture staggers the faith of the reader, he may reflect that the Peruvian mountains teemed with gold; that the natives understood the art of working the mines to a considerable extent; that none of the ore, as we shall see hereafter, was converted into coin; and that the whole of it passed into the hands of the sovereign for his own exclusive benefit, whether for purposes of utility or ornament. Certain it is that no fact is better attested by the conquerors themselves, who had ample means of information and no

motive for misstatement. The Italian poets, in their gorgeous pictures of the gardens of Alcina and Morgana, came nearer to the truth than they imagined.—*Prescott's Hist. of the Conquest of Peru.*

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THE TEA-PLANT IN INDIA.—We learn from the Calcutta Gazette, that the efforts of Dr. W. Jamieson, superintendent of the botanic gardens in the northwest provinces of India, to introduce and extend the cultivation of the tea-plant have been highly successful. The tea brokers in England have, moreover, pronounced the Indian tea equal to China tea of a superior class, possessing the flavor of the orange-pekoe, but more than its usual strength, and in other respects resembling that imported under the name of ning-yong. The tea tree in Kemaon is not only identical with the China plant, and as capable of being made into as fine a description of tea, but the climate and soil in Kemaon are as suited to the favorable growth of the shrub as the finest of the Chinese localities; and, moreover, the tea is as highly prized in the districts in which it has been raised as it is in England. One hundred and seventy-three seers of it were recently sold at Almorah, and produced from four to five rupees the seer, a price equal to the best foreign tea sold in Calcutta. According to the calculation of Dr. Jamieson, the price for which it can be raised is so low as to afford the greatest encouragement for the application of capital: he estimates that if cultivated on a sufficiently large scale, the prime cost in Calcutta, including every expense, would be little more than eight annas a seer, or one-eighth of the present price. Supposing the cost of cultivation to be double what is here estimated, a sufficient amount of profit would still be left. The capacity of the provinces of Kemaon and Gurhwal for the enlarged production of the article, does not moreover appear to be limited to particular localities. According to the latest report that has been furnished, 176 acres were under cultivation, containing not fewer than 322,579 plants. The crop is thriving in different places over four degrees of latitude, and three degrees of longitude; and 100,000 acres are available in the Dhoon alone for the purposes of tea cultivation. At a maund an acre, they would yield 7,600,000 lbs., which is equal to one-sixth the entire consumption of England.—*London Hort. Mag.*

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EXPOSING GREENHOUSE PLANTS IN SUMMER.—Many green-house plants, and especially the more delicate kinds, often suffer much injury from exposure to the sun's rays in summer. When so exposed without the benefit of shelter of any kind, the soil is apt to become so thoroughly dried, that it is with difficulty again wetted, and hence the scorched and stunted looking growth which may sometimes be seen on such plants in the summer season. The injury in most cases arises not from exposing the stem and branches of the plants, but from exposing the pot in which it is growing; the sun's rays acting on the sides of the pots, in conjunction with the evaporation constantly going on, soon deprives the soil of its moisture; and as all the tender roots are usually more or less in contact with the inner sur-

face of the pot, their injury is inevitable. It is no uncommon thing to see the soil so much dried as to shrink quite away from the pot, and in this case the roots cannot avoid being more or less injured. Under such circumstances, too, the water which is supplied sinks down as fast as it is poured on, and fails, for a long time at least, to moisten the interior of the soil. Then again, the necessity for constant watering caused by this exposure, is an evident waste of time. When plants are turned out-doors (and also when kept in-doors) their roots ought to be sheltered by some means from the influences alluded to; plunging the pots in some open porous material will answer the end as well as anything; and of the substances that may be employed, moss, coal ashes, rough peat, saw-dust, or fine charcoal are among the best that can be employed. It is desirable, also, to afford the entire plants a very thin shade during the intense sun heat of summer, but the lighter the material employed the better.—*Ibid.*

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BULBOUS PLANTS.—To check the growth of the foliage of bulbous plants is very decidedly injurious to them. After they have done flowering, it should be an object to stimulate the leaves to make strong and vigorous growth; and this should be done under the influence of strong bright light, and continued till they show symptoms of having passed their maturity; this is generally indicated by their turning yellowish, and decaying at the tips. Moisture—both at the root, and in the atmosphere—is then to be reduced gradually until they are brought to a state of rest. It is, therefore, an erroneous though a common practice to cut off the foliage of hardy bulbs as soon as their bloom is faded, or even at any subsequent period, while that foliage is in a growing state; and it is also hurtful, though sometimes necessary, to take them up and remove them to another place, unless this can be done without greatly disturbing their roots.—*Ibid.*

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HOTHOUSE FIRES.—Great waste of fuel is often the result of the ordinary mode of managing hothouse fires. Much of the smoke, for instance, which is in itself a nuisance, is also a waste, for the gases which thus pass away are capable of combustion, and thus of increasing the amount of heat which is developed. Whenever pure coals or coals blended with cinders are employed in furnaces, it will be found to be a palliative of this nuisance to push forward towards the neck of the flue the bulk of the red-hot fuel, previous to mending the fire, and to deposit the fresh fuel in front of the glowing mass. The gas, which is liberated and forms smoke, is thus made to pass directly over the hottest part of the fire, and to a great extent becomes ignited. The bulk of red-hot cinders should be considerable before the ash pit doors or dampers are resorted to, and then, particularly at "damping up" for the night, small cinders and moist ashes should alone be employed; on no account pure coals. A writer in the *Pharmaceutical Times* states, that a scientific chemical remedy for the smoke nuisance offers itself, by introducing a cast iron tube from a boiler, to convey a column of steam to be dispersed by a

rose nozzle over the surface of the coking coal. New combinations thus take place, which affect the entire combustion of the inflammable gases, and where it has been applied the disappearance of the column of black smoke has immediately followed its application.—*Ibid.*

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SELECT PLANTS FOR BEDDING IN FLOWER GARDENS.—*Campanula carpatica alba.* The true white-flowered variety of this species has been until recently, a rare plant in our gardens (having been generally substituted by an indifferent pale-coloured one,) and though still comparatively rare, it will, ere long, take its place as one of the best white-flowered plants for the flower-garden, affording an excellent contrast to its original type in the blue-flowered one. It is dwarf, and compact, producing numerous white, open, bell-shaped blossoms, upwards of an inch in diameter, and blooming for a considerable period during July, August, and September. It is specially adapted for planting *en masse* in beds or parterres, and equally suitable for a heavy edging to borders or beds of evergreen shrubs. It is the most readily multiplied by division from the roots, being otherwise slow of increase by cuttings. This species, in common with many others allied, secretes a viscid milk-like fluid, from which I infer that its culture in pots or vases will require a porous material, of which loam should predominate, with one-third dry fermented manure, or dry unfermented leaf-mould, with a sixth part of pounded brick, potsherds, or similar material.

2. *Calandrinia umbellata.* One of the most brilliant little plants ever introduced, of a compact decumbent habit, with a greyish furred aspect, and in the absence of the last feature, would readily

be taken for a linear-leaved species of Thrift. Though its ordinary extent of growth seldom exceeds a span, it is richly adorned with terminal clusters of violet crimson, salver-shaped blossoms, upwards of an inch in diameter; and whilst it is equal to the finest kinds of Portulacaeas in beauty, it possesses beyond them a feature essential to every good plant, in being perennial in its duration. It was introduced by Messrs. Veitch of Exeter about two years ago, and though now found in all general collections, it is by no means plentiful.

Nothing can surpass its effect, *en masse*, in a small parterre, or for single effect upon rockwork, or a partially raised mound upon ordinary borders.

Wherever plants are esteemed as "Nature's jewels," this should always be found within the casket.

3. *Anagallis cærulea compacta.* This is the most valuable blue-flowered variety, and is known in the nursery collections as *A. grandiflora cærulea* and *A. grandiflora compacta*. In growth it is nearly a counterpart of the original small narrow-leaved *A. grandiflora*, but in the present kind assuming a darker green aspect, more dense and compact in its habit, and much more profuse in its bloom, which is of a rich ultramarine blue. It possesses none of the excessive vigor of the stronger varieties. For bedding it is an invaluable kind, and under skilful management, by accumulating and duly restricting its growth previous to its summer bloom, would form a beautiful edging for marginal effect. It is also a very ornamental object by its diversified effect on limestone rock-work, and forms a lovely contrast for portable specimens in pots or vases, in company with the fine white variety of *Lobelia erinus compacta.* *Gard. Chron.*

DOMESTIC NOTICES.

THE STRAWBERRY QUESTION.—*Mr. Editor:* The error into which I conceive you have been led, in supposing that Hovey's Seedling was originally a perfect plant, and has in a great measure become pistillate by cultivation, is easily explained. You have been cultivating the Boston Pine, another seedling of Mr. Hovey, as his old Seedling. Mr. Hovey cultivated his Seedling for sale, among other varieties, most of which were staminate, and found it a certain bearer. It was in great demand, and sent by him to all parts of the Union. Where cultivated by itself, it proved entirely barren, and complaints reached him from all quarters. Unable to account for this barrenness, he sent his Boston Pine, as the Seedling, believing it a perfect plant, in its place. He sent it to yourself, Mr. Curtis, Mr. Buist and others. Mr. Buist sold both at the same time, as the same plant, having so understood Mr. Hovey, and the Boston as the original perfect, at the highest price. The Boston Pine is not perfect, but more or less defective in pistils, and ranking as a bearer scarcely equal to the Ross

Phoenix and Swainstone. Mr. Downing could be easily deceived in its bearing qualities, as he at the same time claimed for the Ross Phoenix and Swainstone the same character. It is singular, indeed, that Mr. Hovey should still claim for his Boston, that it is a large fruited, perfect plant. I discover that Mr. Prince advertises a new variety of the same character. Mr. Prince sells them at \$5 per dozen, yet will not send a single plant for me to Mr. Wilder or Mr. Jackson, notwithstanding I have offered \$500 for such a plant. I claim that there is no such plant; that cultivation never changes the original character of the plant. Once defective in stamens or pistils, always so. Once partially perfect only in both, always so, though more productive some seasons than others. When Professor Lindley shall have progressed so far, as to admit the existence of staminate and pistillate plants, and that the latter only are worthy of cultivation, it will be time enough to consult his articles. I claim to be strictly correct in all the principles I have advanced, notwithstanding the "numerous errors

and contradictions" discovered by Mr. Hovey in my articles. When he shall have devoted the same attention to the character of the plant for a single season, that I have every season for thirty years, he will not be twelve years in discovering that a seedling of his is wholly defective in male organs. To do this, he must, from the time vegetation starts in the spring, till the fruit season is over, be among his beds from daylight till breakfast time, and for a greater or less number of hours through the day, and not cease to visit them daily till the season is over; and do most of the planting, thinning out, and weeding himself.

As an evidence that Hovey's Seedling was originally perfect, and still partially so, Mr. Downing states that Mr. Tucker and Mr. Sargeant had beds of Hovey's Seedling perfect, that were obtained from Mr. Hovey himself. It will be found that these were the Boston Pine. The only surprise is, that a person could for one moment be in doubt, as the Boston plant bears no resemblance to Hovey's justly celebrated Seedling. As soon as English cultivators obtain a little practical knowledge, Hovey's Seedling will supersede their famous British Queen, Wilmot's Superb, Swainstone and Keene seedlings, and all these be used merely as impregnators, even by the great Professor Lindley himself. But "bodies move slow." Principles established by Linnæus are not easily overthrown, by new doctrines learned from an ignorant marketwoman. Yours. *N. Longworth. Cincinnati, July 8, 1847.*

P. S. Mr. Hovey readily discovers my "numerous errors and contradictions," yet he was years, after his attention was drawn to the subject, discovering the defect of his Seedling in stamens. The children of my tenants, who cultivate the strawberry for sale, would, on the first view of his Seedling in blossom, at the distance of twenty feet, tell him it could bear no fruit without a husband.

REMARKS. The power of a *clairvoyant* in seeing things hidden from the orbs of common mortals, is outdone by our correspondent, who puts on his spectacles of discovery, and looking from the Queen city of the West across the Alleghanies, is able to decide, past even the shadow of a doubt, the true name and character of a disputed strawberry plant in our garden on the Hudson!

What Mr. Hovey may have sent to Mr. Baist and others, as his Seedling strawberry, we know not; but of this we are certain, that our plants referred to by Mr. Longworth, are not *Boston Pines*. The latter sort we have from three sources, and received them in full bloom this season from the President of the Massachusetts Horticultural Society, and can state with the utmost certainty, that there is no resemblance whatever to the variety we have previously alluded to. as perfect or staminate-blossomed Hovey's Seedling, either in their flowers or fruit. The fruit, leaf, and blossom of the Boston Pine are totally distinct from those of Hovey's Seedling, and could never be mistaken for it by any person who had seen the two sorts; while the fruit of the variety we have cultivated as a staminate Hovey's Seedling, strongly resembles that of the common pistillate Hovey in form, size and flavor.

Mr. Tucker, to whose note, p. 49, Mr. Longworth

alludes, has sent us the following reply to Mr. L.'s remarks, dated Albany, July 23d:

"I observe that Mr. Longworth comes to the conclusion that the plants alluded to in my note in the Horticulturist, as received from Mr. Hovey, are, really the *Boston Pine*, and not *Hovey's Seedling*. But it so happens, that I received from Mr. Hovey at the same time, 100 Hovey's Seedling and 12 Boston Pine strawberries. Now the plants sent me are *very distinct varieties*, and I have no reason to doubt their being true to their names. Those sent as the Boston Pine are large plants—the foot-stalks and leaves being considerably larger than those sent as Hovey's Seedling. The fruit also was larger, and there was much less of it. Another mark of difference is, that the Pine sends out *very few* runners compared with the Seedling. Mr. Longworth's conclusion in my case, therefore, cannot be correct."

Mr. Longworth is correct in saying that Mr. Hovey has only lately arrived at any definite knowledge of the character of his own Seedling. Mr. Beecher indeed took the trouble to write a long article (which we reprinted, p. 274 of our last volume) showing that Mr. H.'s opinions on the character of the strawberry were not entitled to the least consideration, and varied every year. Thus, in 1843, in his November number, he wrote, "there is no necessity of making any distinction in regard to the sexual character of the plants when forming new beds."

In 1844, he repeated, "there is no such thing as male and female plants."

But when his new sort, the Boston Pine, came out, he suddenly changed his views, and the following are his words: "Let the causes be what they may, it is sufficient for all practical purposes to know that the most abundant crops can be produced by planting some sort abounding in *staminate* flowers, in the vicinity of those which do not possess them."

Mr. Hovey's ground now is that Hovey's Seedling is the best strawberry in the world; that it is, and always was imperfect or pistillate, and therefore requires to be fertilized by a staminate sort. In the last number of his journal, he says, advising those about making new strawberry beds, "our plan is to set ten rows of Hovey's Seedling, and then ten rows of Boston Pine: both are equally productive, and one fertilizes the other."

The advice is good, and to the good qualities of the strawberries themselves, we have continually borne testimony. But it is worthy of attention that Hovey's Seedling was quite perfect, and bore admirably; that there was *no need of any distinction in regard to the sexual character*, until just at the moment when the new seedling, the Boston Pine, was ready for dissemination!

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TREATMENT OF TREES CARRIED TO COLD LATITUDES.—As a preference is given to the transmission of trees from the Atlantic nurseries to the remote Western States during the autumn, and as it often happens that they arrive at their destination after the ground has become frozen, a few simple suggestions may be deemed appropriate.

On the arrival of trees after the ground is frozen,

the best course is to bury them horizontally in a dry cellar, by making a hole two to three feet deep, and placing the trees therein with layers of sandy loam or other light soil between each layer of trees. The earth should be made fine so as to fill in compactly. They may thus be well preserved till spring, and if the frost has affected the trees in any way, it will be abstracted. Another course is to dig a trench in the cellar sufficiently large to contain the roots, and to heel the trees therein (as it is termed,) covering the roots well with fine earth, so that it may penetrate among the fibres, and leave no vacant spaces. Positive attention must be paid to the point that the cellar be a perfectly dry one, for if the earth becomes sodden during the winter, it will greatly injure, if not kill the roots. When trees are received before the ground is frozen, but which are designed for spring planting, or are intended for spring sale, the following course will be found every way appropriate: Select a spot of ground that is perfectly dry, that is, one whose texture admits of a free filtration, and dig a space sufficiently large to the depth of four feet; place the trees therein horizontally, with layers of the same light mould or sand between them, filling in all compactly until within two feet of the surface, then fill up the balance entirely with earth. There will then be two feet of soil through which the frost will have to penetrate before it can reach the trees, which will be a sufficient protection in almost any case. In very severe latitudes, however, like Vermont, Maine, New-Hampshire, and the British Provinces, the depth may be increased another foot, but should a partial degree of frost reach the trees, it would not materially affect them. The trees thus secured will, when taken out in the spring, possess all the freshness of newly transplanted ones, and being on the spot at the very opening of spring, can be placed in their respective positions at the very earliest period of removal with every prospect of success. *William R. Prince. Linnean Nurseries, Flushing, L. I., Aug. 6, 1847.*

POWER'S LARGE CRAB.—Some years since, while visiting a few of the many choice fruit-gardens between New-York and Albany, we met with a new Siberian Crab, raised by a fruit cultivator at Hudson, Mr. POWER, which, from its size and beauty, we considered quite a desirable acquisition to this class of apples.

The tree resembles the large red Siberian Crab, and is an abundant bearer. The fruit is produced in clusters, presenting when ripe a most attractive appearance, and is about six inches in circumference, somewhat flattened and regularly formed. Skin greenish yellow, with a beautifully colored cheek, and its whole surface highly polished. Stalk short, basin slightly depressed, calyx closed. It will be fit for preserving, etc., in the course of next month.

Regarding it as worthy of cultivation, we have, under the name of *Power's Large Siberian Crab*, disseminated it to some considerable extent. *R. B. Parsons. Flushing, L. I., 8th mo., 1847.*

RAUL'S GENNETING APPLE.—This is the apple I sent you last fall under the appellation of the *Rock-*

remain or *Neverfail*, which you said was "unknown to you." It is extensively cultivated in Ohio, and was introduced into this State by the late Governor Worthington. When a member of Congress, he frequently bought the apple of a Quaker who attended the market, and taking a liking to it, he procured of the Friend a few scions, which he sent in a letter to Mr. Haynes, a nurseryman near Chillicothe. From this source it has extended. We have seen it growing, in various directions, from the Ohio river near Wheeling, to the neighborhood of Cincinnati.

That the Rockremain of Ohio, is identical with Raul's Genneting of Kentucky, as described by our friend Byram, in your number of this month, I will vouch. Several Kentucky gentlemen, who have visited my house at different times, and ate of my Rockremain fruit, have, without hesitancy, pronounced it the Genneting of their State, and so described the habits of the tree that there can be no mistake in the matter.

The tree with me is but a moderate grower, but a profuse bearer. When full, the apples hang in clusters like grapes. They were loaded down last year, and have a tolerable crop this year. Putting out buds and blossoms in the spring, some two weeks later than other trees, enables them at intervals of some ten or twenty years to make a splendid hit at bearing, though most seasons the frost serves them as it does the balance of the orchard.

The apple is juicy, tender, delicate, and although good for cooking and tolerable for eating, through the winter, is not in its perfection until March and April. And then it is hard to beat. We gave both the green Newtown Pippin and the Rockremain, last spring, to some fifty persons, and requested them to say which they preferred. Three out of four gave the decided preference to the latter. It is a much better keeper than the Pippin, though it is not so large, nor does it retain its flavor, in perfection, so long. The Pippin is much more acid. The fruit, with us, is not so much elongated, on one side, as the cut in your July number, but there is not more difference in the cut and our fruit, than there is in the shape of apples on different trees of of the Newtown Pippin in our orchard.

We have thought, for some time, the celebrity this apple has, with many people, entitles it to a place in your valuable book of "Fruits," and with this view we forwarded you a specimen last fall. Whether the Worthington name, or the Kentucky name, should be the standard, your judgment will enable you to determine. We will make this suggestion, however, that Genneting is a name common to a number of apples, while Rockremain (suggested probably by the durable quality of the fruit,) is not known in the list of apples. The term "Neverfail," has been added from its bearing qualities. Yours, &c. *C. Springer. Meadow Farm, O.*

FORCED GRAPES.—We have had for sale here, at the confectioner's for three weeks past, very fine Black Hamburg grapes, raised under grass and slightly forced, which at first sold for one dollar the pound, but have fallen within two days to seventy-five cents. A good crop from Andalusia, (the seat of the late Mr. BIDDLE,) is understood to be nearly

ready for the market, some of which will no doubt be sent to New-York, and several amateurs have good prospects; a few of these will no doubt sell their surplus, so that a small supply will this year be found among us at about fifty cents the pound, and the supply will continue probably all September, with Chasselas, Sweet water, Muscat of Alexandria, and a few others.

It is an interesting question to be solved by the information obtained from as many quarters as possible, and to be obtained from some of your correspondents, at what price this delicious fruit would be profitable to cultivate under glass. It would be desirable to know this, both for forced fruit and that which had merely the protection of glass. All our cities have yet to be supplied, and it will probably turn out that with care and economy, and with a good understanding of the whole routine of culture, it may prove on a large scale a capital business. Let all who can give results, by weighing all they pick from their glass houses, inform the editor of the quantity they produce and the cost, recollecting that a graperly does not afford constant occupation to a gardener, but that a man hired by the month can also attend to a good kitchen and flower garden, or with an assistant, can do much besides even attending a very considerable graperly. It does not require much time in fall and winter, &c. &c. *J. S. Philadelphia, Aug. 9th, 1847.*

THE GREAT ANNUAL FAIR, of the N. Y. State Agricultural Society, will be held at Saratoga Springs on the 15th, 16th and 17th of September.

MASSACHUSETTS HORTICULTURAL SOCIETY.—The nineteenth annual exhibition will be held at the Society's Hall, Boston, on Wednesday, Thursday and Friday, September 22d, 23d and 24th.

THE PENNSYLVANIA HORTICULTURAL SOCIETY, will hold its nineteenth annual exhibition on the 15th, 16th and 17th of September, in the Philadelphia Museum, corner of Ninth and George streets, and will occupy the two grand saloons of that building. The committee solicit contributions in fruits, plants, flowers, and culinary vegetables. Articles from a distance may be sent by Adams & Co.'s Express, and the Society will cheerfully defray the cost of transportation. The same may be addressed to D. Landreth's seed warehouse, 65 Chesnut st., or Thomas P. James, 212 Market street, Philadelphia.

AMERICAN AGRICULTURAL ASSOCIATION. *Horticultural Exhibition.*—This society, to avoid conflicting with the State Fair, will hold its autumnal exhibition of fruits and flowers at the Lyceum building, 561 Broadway, on the 8th and 9th of September. It is expected that this will be a more brilliant show of fruits and flowers than has been seen in New-York for many years.

MONTREAL HORT. SOCIETY.—We have been favored by the Rev. Mr. VILLENEUVE, one of the Vice-Presidents of this Society, with a copy of the proceedings connected with its formation, together with its list of premiums to be awarded at its autumnal show, to be held on the 8th of Sept. The institution is under the patronage of his excellency

the Earl of Elgin and Kileardin; the Hon Mr. Justice Day, President, whose address, at the meeting held for organizing the Society, we have read with interest.

NEW HAVEN COUNTY HORTICULTURAL SOCIETY.—The seventeenth annual exhibition of this spirited Society will take place at the State House, New Haven, on the 28th, 29th and 30th of September. An address will be delivered before the Society on the afternoon of Wednesday, the second day; and we are requested to say that delegates from other Societies, on making themselves known at the place of exhibition, will be cordially received by a committee appointed for the purpose.

A Horticultural Society has been organized at Springfield, Mass., and the following officers appointed:—Wm. B. Calhoun, *President*; Timothy W. Carter, J. B. Bridgeman, Henry Vose, *Vice-Presidents*; B. K. Bliss, *Secretary* and *Treasurer*; Rufus Whittier, D. M. Bryant, Richard Bliss, Henry Brewer, Jr., Lucius Harthan, *Directors*.

HOVEY'S FRUITS.—I have carefully examined the new periodical of Mr. Hovey, with colored plates of fruit, reviewed by you in p. 568 of the *Horticulturist*, and am surprised that you have spoken so favorably of it, and commended it to the public favor. I suspect that there must have been a copy of it specially prepared for your eye, as those I have seen disappoint many here. The coloring is poor, and the portraits or likenesses quite bad. *Baldwin* apple for instance, is painted a bright *scarlet*, when every one knows the fruit itself is of a purplish red. I am quite confident too that no cultivator would recognize the *Glout Morceau* pear from the plate given of it.

Among other great things promised in the *prospectus*, was "Sketches of the habit of the tree." Without wishing to be hyper-critical, I call upon any one knowing the growth of the *Baldwin* apple to look at the "sketch of the habit" of that sort, given at the beginning of the description on page 11. It looks more like a sketch of the habit of a lean asparagus stalk!

If the future numbers evince no more pomological discrimination than the first, the work will be of little value. Yours. *W. Philadelphia, Aug. 10th, 1847.*

THE DUTCH ELM, (*Ulmus suberosa*).—This is, as many of our readers are aware, one of the most vigorous and rapid growing of all the fine genus of trees to which it belongs. It is distinguished from other foreign species by its *corky* bark. Though the tree is not so graceful and elegant in shape as our American weeping Elm, it forms a large, upright, and dark massy head of foliage, and few trees serve better to form rapidly, thick screen plantations, to hide unsightly objects, or produce rich masses of verdure, than the Dutch Elm.

We have also observed the present season, that trees of the Dutch Elm, standing in the streets of a village, among other native elms, were entirely untouched by caterpillar, and other insects which prey upon the latter. If this exemption is constant, it will render the Dutch Elm particularly valuable as a town shade tree.

SUMMER CROPS OF PEAS.—Those of your readers who are fond of a succession of this fine vegetable, and have found difficulty in obtaining such during the drier parts of the summer, may be pleased to learn that they may be successful if they will plant them in shallow trenches, in the same way as they are usually prepared for celery—the trenches should, however, only be five or six inches deep. These trenches catch a supply of moisture during showers and retain it, so that, as I have found, the rows of peas grown in them, are green and luxuriant, when on the flat surface adjoining they fail entirely. *W. H. Philadelphia, August, 1847.*

'STRAWBERRIES.—Although pressed by avocations, I cannot allow the mistaken statement of Mr. HOVEY, as published in the last number of his magazine, to pass unnoticed. He has just reason to be proud of Hovey's Seedling for its great size and beauty, although so deficient in flavor, without detracting from other varieties. He says that at the Flushing exhibition, Hovey's Seedling "received the prize for three quarts, in competition with upwards of 30 other varieties;" whereas the truth is, that no other kind whatever was offered in competition for the three quart premium, the 30 varieties being exhibited in small quantities of a pint or less as a collection, and a premium was awarded to them. The case was similar at the exhibition in New-York, where a premium was also awarded. Having above 60 estimable varieties, more than 20 of which would be pronounced superior to the Hovey where flavor was considered, we had necessarily to send but a small quantity of each in our show cases; but there never has been seen in Europe or America so splendid a collection as we exhibited. The great vendors of Strawberries in the New-York market, stated, the present season, that they could not sell the Hovey Seedling, until their stock of the *Crimson Cone* was exhausted. What will be said when the Primate, Primordian, Charlotte, Eberlein, and other choice varieties, are sent in quantities to our markets. We solicit friend HOVEY to pay a visit to Flushing, and not keep his eye so *askance*, for we are all co-laborers in a common cause. *Wm. R. Prime. Flushing, August, 1847.*

FAVORITE ROSES.—*Dear Sir:* Perhaps it may be interesting to some of your readers to know the opinion of an amateur cultivator on the subject of roses. I find that no question is asked more frequently than "What are your favorite roses, as I see you cultivate a large collection?" Now it is perhaps a little difficult to select, but there are a few sorts that are such established favorites with me, that I will not hesitate to name them. First, then, among the *Bourbons*, — *Souvenir de Malmaison*, always large, finely formed, and of a most delicate and lovely shell color, — *Paul Joseph*, rich crimson, a tint rare in summer roses, and for its *otto* perfume an old variety, *Gen. Dabourg*.— Among the *Noisettes*, I will mention only one, indispensable in all collections — *Atmee Vibert* — always in bloom, and its clusters of the purest white; it makes a charming bed when it is planted in a mass, and the shoots pegged to the surface as they grow. Among the *Tea Roses* it is difficult to de-

cide, as there is so much beauty and perfume — but on the whole, I think there are few sorts that surpass *Deventensis*. From an *Amateur. New-York, August, 1847.*

ALBANY AND RENSSELAER HORT. SOCIETY.—The second exhibition of this Society was held at the Court-House in Troy on the 24th of July:—*Greatest variety of Green-house plants*—Premium to L. Menand, Watervliet. Dr. H. Wendell exhibited the greatest variety of *Phloxes*—16 fine new varieties. *Greatest variety of Dahlias*—Premium to W. Newcomb, Pittstown, who presented 76 kinds. *Floral ornaments*—First premium to Mrs. D. T. Vail, Troy; second premium to Joel Rathbone, Albany. *Hand Bouquets*—First premium to Dr. H. Wendell, Albany. *Vase Bouquets*—One offered by Mrs. Chas. H. Merritt, highly commended. *Currants, best flavored and finest*—First premium to J. W. Haydock, Greenbush, for the kind called "white grape;" second premium to Jas. Wilson, Albany, for "Knight's sweet." *Gooseberries, best specimens and finest flavored*—First premium to S. E. Warren, Troy, for "Lord Creve;" second premium to Henry Vail, Troy, for "Green Walnut." *Raspberries, best specimen and finest flavor*—First premium to Henry Vail, Troy, for "Francia;" second to V. P. Douw, Greenbush, for "Red Antwerp."

VEGETABLES. *Best Beets*—Premium to E. P. Prentice, Albany. *String Beans*—Premium to Dr. H. Wendell, Albany. *Cucumbers*, (open culture.)—Premium to V. P. Douw, Greenbush. *Roman Cucumbers*—Special premium, V. P. Douw. *Squashes, best summer*—Premium to Joel Rathbone, Albany. *Tomatoes*—First premium, V. P. Douw; second, E. P. Prentice. *Egg-plants*—Sample by E. P. Prentice, highly commended. A *winter Squash* of the growth of 1846, in great perfection, was presented by James Montgomery, Troy. A variety of vegetables, fruits, flowers, garden tools, &c., very tastefully arranged by Alex. Walsh, Esq., of Lansingburgh, attracted much attention, and for which a special premium of \$2 was awarded. The show of currants, &c., was specially fine.

The third exhibition was held at Troy on the 22d of August. "The display of apples and plums, indeed of all the fruits of the season," says the Troy Whig, "was worthy of all praise. The floral exhibition was no less meritorious. In Dahlias, Asters, and Verbenas, we have seldom seen more perfect specimens or a greater variety. Water melons, of a size which we could not have believed they would attain in this latitude so early in the season; nutmeg melons of the most orthodox shape, with every variety of the melon family, were there in profusion, with mammoth egg plants, squashes," &c. &c.

THE CHRISTIANA MELON.—The seeds which you obligingly sent me of Capt. LOVETT's new melon, have done well and yielded me a fine crop. Planted at the same time with the netted *citron* and nutmeg melons, they ripened ten days earlier. Although I do not consider it quite equal in flavor to these two varieties, still it is an excellent sort, and its early maturity renders it particularly valuable. *T. B. New-York, Aug. 3d, 1847.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

Exhibition of Saturday, July 3, 1847.

FLOWERS.—From M. P. WILDER, President of the Society, ten pots of new Gladioli, viz: Duc d'Orleans, Lehmanni, Christianus No. 1, insignis, Wilhelmus, Spersnill, pyramidalis, Dohreii, Pawlonia, and Queen Victoria; the varieties are all fine, some of them exquisitely beautiful. Cut flowers in great variety, including fine Roses, among which were noticed Princess Clementine (a new white,) Alba Felicite, La Vestale, Madame Hardy, Kean, Blanche Fleur, La Reine, Mrs. Elliot, Louis Bonaparte, Earl Talbot, Marquise Borella, &c. &c. Also, new scarlet Geraniums, viz: Prince Albert, Cyrus, Queen, Shrubland superb, Brighton Hero, Gen. Tom Thumb, and Goliah. Also, Cacti, Duetzi, and other cut flowers.

From Hovey & Co., one large circular bouquet, two very fine large flat do., and six hand do; also, a great variety of fine Roses, and other cut flowers.

From John Kenrick, a fine flower of Magnolia macrophylla. Why is not this beautiful tree more generally cultivated?

From J. E. Teschenmacher, a plant of Hecatanthus tenuifolius, a rare and very beautiful flower, introduced to Rio Janeiro from Africa.

From Joseph Breck & Co., one large circular bouquet; Prairie and other Roses; Pinks; Lilium martagon alba, purpurea and punctata; Lilium umbellatum; Campanula media, four varieties; C. persicifolia, three varieties; C. longata; Phlox Van Houttii, micrantha speciosa, and staveolens; Persian Iris in variety; Digitalis in variety; Delphiniums; Paeonies; Dianthus barbaratus in variety; Duetzia scabra; Clematis alpina, &c. &c.

From Augustus Aspinwall, a great variety of Roses.

From E. V. French, Roses in great variety.

From William Kenrick, by Miss Russell, one large bouquet, and a basket of flowers, with a great variety of cut flowers, including Paeonies, &c.

From O. H. Mathers, cut flowers in great variety, including fine specimens of Phlox Van Houttii, and other varieties; Verbenas, Roses, Pelargoniums, and other green house flowers.

From S. Walker, a great display of Prairie Roses, of different varieties; Duetzia scabra, Spirea arnensis, and japonica, Delphinium, Clematis alpina, and other cut flowers.

From Parker Barnes, fine specimens of double dwarf Rocket Larkspur, Digitalis, Campanula media in var., Pentstemon digitalis; Duetzia scabra, Cactus Speciosissimus; Dianthus barbatus, fine sorts including a double var; Verbenas, Roses, Ipomopsis picta, Petunia Hebe and other fine sorts, Perpetual Pinks, Scabiosa atropurpurea, &c. Also, one hand bouquet.

From A. Bowlitch, six fine hand bouquets.

From Wm. Mellor, six varieties of Dahlias; Pinks, Pelargoniums, and other cut flowers. Also, two bouquets.

From J. L. L. F. Warren, ten pots plants, viz: Crassula spec., Rondeletia speciosa, Erica ventricosa superba, Calceolaria, Gardenia radicans, Mammillaria scopia alba, and Wildiana, Echinocactus spec., Euphorbia maliformis and Ixora rosea; one round vase bouquet, one flat ditto., six flat hand do., and two round hand do. Also a fine display of Prairie Roses, and cut flowers in great variety.

From Messrs. Winship, a fine show of Prairie Roses, White Azalea shrubs and herbaceous plants in great variety. Also, two mantel bouquets.

AWARD OF PREMIUMS

For the best six hand bouquets, to Messrs. Hovey & Co., \$2. For the second best do., to Azell Bowlitch, \$1.

For the best pair flat mantel bouquets, to Hovey & Co., \$2. For the second best do., to the Messrs Winship, \$1.

For the best round bouquet, to Messrs. Hovey & Co., \$2. For the second best, do., to J. L. L. F. Warren, \$1.

For the best Pot Plants to J. L. L. F. Warren, \$2.

ON PRAIRIE ROSES.—James Nugent, R. M. Copeland and J. Breck, judges.

For the best display, a premium to Samuel Walker, of \$4.

For the 2d best to Messrs. Winship, \$3.

The committee recommend a gratuity of \$5, to Marshall

P. Wilder, for his 10 new varieties of Gladioli. Also, a gratuity of \$3 to J. E. Teschenmacher, for a fine plant of Hecatanthus tenuifolius.

FRUITS.—The beautiful specimens of Strawberries presented to-day were placed upon the tables with great skill and good taste. As a whole it was the best display of this fruit that we ever saw.

Of an exhibition where all was so admirably done, we trust we may be permitted to state that this is as it should be, and as it *always ought to be*. The arrangement of the fruit in the dishes, presented on this and on former occasions by Otis Johnson, Esq. has appeared to us as worthy of imitation. Fruits, like flowers, may be much improved in appearance by a judicious arrangement, so as to show the "sunny side." The "British Queen" and "Princess Alice Maude" were made more "illustrious" in the respective dishes of the President of the Society, and J. L. L. F. Warren, by the graceful manner in which the berries were displayed. Hovey's Seedling, by O. Johnson, Hovey's Seedling and Boston Pine, by Messrs. Hovey; Richardson's Seedlings, Nos. 1, 2, 3, 4 and 5, Hovey's Seedling, Swainstone's Seedling and Boston Pine, by Josiah Richardson; five baskets of Fay's Seedling, and one basket of Hovey's Seedling, by Isaac Fay, may be classed among the specimens as having been arranged and exhibited to great advantage. They were truly beautiful specimens.

After a trial of two seasons, the Committee again place Jenney's seedling among the best. It is a very high flavored strawberry when fully ripe.

Josiah Richardson's seedlings, numbers two and five, possess considerable merit.

Isaac Fay's seedling. The berries were large and handsome, but they lack the essential qualities of a good strawberry, viz: delicious flavor.

The basket of "Swainstone's seedling" Strawberry, presented to the Committee by Josiah Richardson, (used by them as a test) were very rich. Mr. Richardson will please accept the thanks of the Committee for his generous supply.

The cherries, Black Tartarian and Elton, by John Fisk Allen, of Salem, nicely arranged in a small dish, (one almost white and the other black) produced a charming effect. As specimens they were truly beautiful.

In the collection of the President of the Society we noticed a few berries of the seedling Strawberry "Lezzia Randolph," raised by W. D. Brinkle, M. D. of Philadelphia. We were pleased with its appearance. Another season we hope to test its essential qualities. The President also presented beautiful specimens of Jenney's seedling and Princess Alice Maude.

Otis Johnson, of Lynn, Hovey's seedling Strawberries and beautiful specimens of Cooledge's Favorite Peaches.

W. T. C. Morton, M. D. Hovey's Seedling.

Cyrus Curtis, Roxbury,—Strawberries?

E. Bowen, Lynn, Early White Heart Cherries?

J. L. L. F. Warren, Brighton, Early White Heart Cherries, (?) and Swainstone's Seedling, Jenney's Seedling, Prince Albert, Stoddard Pine, British Queen, Whitewood, (beautiful specimens,) and Hovey's Seedling Strawberries.

John Fisk Allen, of Salem, five varieties of Grapes; Figs; and three varieties of Peaches, viz: Royal George, (fine,) Grosse Mignonne of New-Jersey? (small,) and Hoffman's Favorite.

Samuel Downer, jr., of Dorchester, Cooledge's Favorite Peaches, and fine specimens of Hovey's Seedling Strawberries.

Seedling Wood Strawberries, by Samuel Walker, of Roxbury.

Exhibition of Saturday, July 10, 1847.

FLOWERS.—From M. P. WILDER, President of the Society, new Phloxes, viz: Anias Chauverii, white, with rosy purple eye, after the style of Oeil de Lynx, very fine; Augustine, and delecta; Prairie Roses, Queen, Baltimore Belle and Perpetua; Pink, Blush Moss, cristata, Noisette, Solfataire, in quantity, and other varieties.

From Messrs. Winship, a pair of fine mantel bouquets,

Prairie Roses, Perpetual Pink, Baltimore Belle, and hardy Roses in variety; also, a great variety of herbaceous and shrubby flowering plants, occupying one circular and a number of side stands.

From *O. H. Mathers*, by Thomas Needham, a fine plant of *Buddleia Lindleyana*; also a great variety of cut flowers, including Pelargoniums, Roses, numerous and fine specimens of Phlox Van Houttei and bicolor; *P. Drummondii*, var. alba, &c.; Verbenas, Stocks, Delphiniums, &c.

From *A. Bowditch*, seven hand bouquets.

From *James Nugent*, Pelargoniums, Iberis, Roses, Verbenas, Campanula media plena, and other cut flowers.

From *Parker Barnes*, Seedling Pinks.

From *William Kenrick*, by Miss Russell, one large and four small bouquets, and cut flowers in variety.

From *Joseph Breck & Co.*, *Lilium candidum*, umbellatum and Martagon, var. alba, purpurea and punctata; *Digitalis* in variety; English Iris do.; *Campanula* in variety; *Delphinium grandiflorum*, double and single, many varieties; *D. Barlowii*, sinensis, and elatum in variety; *Picotee* Pinks; *Penstemon purpureus*; *Spiraea palmata*, lobata and ulmaria; *Dianthus barbatus* and chinensis in variety.

From *Augustus Aspinwall*, Roses in great variety.

From *Wm. Mellor*, a great variety of Dahlias, viz: Marchioness of Ormond, Madame Chantiviere, Eveque de Bayeux, Thompson's Vivid, Caleb Cope, Primrose, Countess of Liverpool, Columbine, Judy, Madame Villabois, Fairy Queen, Dowager Lady Cooper, &c.; also, two large bouquets; Moss and other roses, Verbenas, Delphiniums, Perpetual Pinks, and other cut flowers.

From *J. L. Gardner*, by J. Thomas, seven pots of Thunbergia, well grown and beautiful, three varieties, Orange, Buff and White; one large design and bouquet, and one round bouquet.

From *J. L. L. F. Warren*, six pot plants, viz. *Tamus Elephantipes*, (elephant's foot) a curious plant; *Gardenia radicans*; *Anigozanthus coccineus*; *Sollya heterophylla*; *Mammillaria* sp.; and *Echinocactus* sp.; the last with a beautiful tubular bluish pink flower. Also, six flat hand bouquets, and one round do.; *Prairie* Roses; white *Water Lilies*; and cut flowers in great variety.

From Messrs. *Hovey & Co.*, very fine *Picotee* and *Carnation* Pinks, among which were the following, viz: Duke of Newcastle, Princess Victoria, Lady Peel, Lady Campbell, Chillwall Beauty, Meteor, Victoria, and some new seedlings. Also, ten kinds of *Prairie* Roses, viz: Queen of the Prairie, Perpetual Pink, Superba, Eva Corinne, Anne Maria, Miss Gunnell, Pride of Washington, Pallida, Jane, and Triumphant. Also, two large flat bouquets, two beautiful double-faced flat hand do., and two round hand do. One plant of *Achimenes patens*, a new variety.

AWARD OF PREMIUMS.

For the best six hand bouquets, a premium to *Azell Bowditch*, of \$2. For the 2nd best do., to *J. L. L. F. Warren*, \$1.

For the best pair of Mantel bouquets to the Messrs. *Winship*, \$2.

To *J. Thomas*, for a design, \$2.

For the best round Pyramidal bouquet, the Messrs. *Hovey*, \$2. For the 2d best do., to *J. Thomas*, \$1.

GRATUITIES.—To *J. Thomas*, for seven plants of *Thunbergia*, \$2.

To *O. H. Mathers*, by Thomas Needham, for a plant of *Buddleia Lindleyana*, \$1.

To *J. L. L. F. Warren*, for a Cactus in bloom, \$1.

FRUITS.—By the President, Cherries, Black Eagle, (juicy and rich,) White Bigarreau.

Otis Johnson, Cherries, Bigarreau Couteur de Chair, White Bigarreau, Black Tartarian, Sparhawk's Honey, (sweet and delicate flavor.) Peaches, Coolidge's Favorite, (beautifully colored.) Strawberries, British Queen, Princess Alice Maude, Prince Albert.

Josiah Richardson, Cherries, Black Tartarian; Strawberries, Hovey's Seedling, Deptford Pine, Prince Albert, Richardson's Seedling, numbers two and five—which fully sustained the opinion expressed in the report made last week.

Parker Barnes, Cherries, White Bigarreau.

J. Fisk Allen, Figs and seven varieties of Grapes.

F. W. Macondray, Peaches, Coolidge's Favorite, (richly colored.)

Josiah Lovett, Strawberries, Prolific Hautbois, (peculiar agreeable flavor,) Hovey's Seedling.

J. L. L. F. Warren, Strawberries, Alpine, Red and White.

Isaac Fay, Strawberries, four baskets—Fay's Seedling, (large and well colored.) The committee made a further trial of Mr. Fay's Seedling, and cannot pass any higher commendation than that expressed in a previous report.

Hovey & Co., Baist's Prize, pleasant acidulous flavor, Deptford Pine, Myatt's New Hautbois, (of a peculiar rich flavor,) Princess Alice Maude, Hovey's Seedling.

J. Owen, Strawberries, Wood, Red and White.

The Committee have again to express their obligations to the President, Messrs. *Josiah Richardson*, *Otis Johnson*, *Josiah Lovett*, *Isaac Fay*, and *Hovey & Co.*, for a liberal supply of Cherries and Strawberries to test their qualities—Hovey's Seedling was used as a test.

Saturday, July 17, 1847.

FLOWERS.—From *M. P. Wilber*, President of the Society, four pots of seedling Japan Lilies from *L. speciosum* crossed with *L. lancifolium* album. These, like all the seedlings which Mr. W. has bloomed, are almost identical with the first named species.

From *J. Breck & Co.*, fine Pinks, Delphiniums, Spiræas and other cut flowers in great variety.

From Messrs. *Winship*, two fine specimens of *Yucca filamentosa* and gloriosa, a variety of double Hollyhocks, Carnations, *Picotee* Pinks and other Herbaceous flowers, including a fine display of variegated shrubs, among which were *Unus variegata*, *crispus*, *vinialis*, *cornubensis*, *Betula laciniata pendula*, and a pair of mantel bouquets.

From *Nahum Stetson*, Dahlias.

From *J. L. L. F. Warren*, Pinks, with other cut flowers, and ten bouquets of different shapes.

From *Mr. Kenrick*, by Miss Russell, three bouquets.

From *James Nugent*, Dahlias and bouquets.

From *Hovey & Co.*, nine bouquets of various forms, including one flat double-faced hand do.; Pot plants; large *Lilium lancifolium* album, *speciosum* and punctatum.

These lilies are of surpassing beauty; Messrs. H. have been very successful in blooming them. The first was a very large and thrifty plant, having no less than six stalks and 24 flowers and buds, while the single bloom on the last named was pre-eminently deserving of the epithet, perfect. The pot plants exhibited by these gentlemen were indeed all very fine, and many of them entirely new. Among them were three species of *Achimenes*, *pecta*, *grandiflora* and *patens*; *Nuttallia grandiflora*, *Fuchsia Nymph* and *Platyodon grandiflorum*. Also, ten varieties Carnations and *Picotees*, about 50 blooms.

From *Wm. Mellor*, two bouquets, and a great variety of cut flowers, Dahlias, &c.

From *J. L. Gardner*, by J. Thomas, eight pot plants, *Achimenes*, *Thunbergia*, and *Gardnia florida*. Also, a singular orchideaceous plant, *Dendrobium spec* with flowers of a pale straw color.

From *S. R. Johnson*, fine Pinks.

From *Parker Barnes*, seedling Pinks, *Gladiolus gandavensis*, &c.

From *A. Bowditch*, six bouquets, and pot plants.

From *D. C. Chapman*, Cambridgeport, fine China Pinks, well arranged.

From *T. H. Perkins*, by William Quant; one fine double bouquet for large vase.

From *Wm. B. Richards*, Dahlias, vars. Caleb Cope, Vivid, &c.

From *Hugh Fraser*, Esq., Charleston, S. C., by J. L. Tucker, a sheaf of Rice, of the present year's crop, in a fine condition, the heads large, the kernels well matured, which attracted much attention from its novelty.

AWARD OF PREMIUMS.

ON BOUQUETS AND POT PLANTS.—For the best six hand bouquets, to *Hovey & Co.*, \$2. 2d best do. to *A. Bowditch*, \$1. And a gratuity for six do. to *J. Nugent*, \$1.

For the best pair of mantel bouquets, to the Messrs. *Winship*, \$2. 2d best do., to *Hovey & Co.*, \$1.

For the best large oval bouquet, to *Wm. Quan*, \$2. 2d best do., to *Hovey & Co.*, \$1.

For the best six pot plants, to *John Thomas*, \$2. And a gratuity to *Hovey & Co.*, \$5.

CARNATIONS AND PICOTEES.—First premium to *Hovey & Co.*, for the best 10, \$5. 2d do. to *S. R. Johnson*, for 2d best do. \$4. Also, \$3 to *Hovey & Co.*, for the best display, and a gratuity to *Parker Barnes* of \$3, for fine Seedlings.

DOUBLE HOLLYHOCKS. A premium of \$2 to Messrs. *Winship*, for the best display.

FRUITS—The cherries exhibited to-day—Cherries! the very name calls us back half a century—to boyhood—to the charming poetry of *Shenstone*:

"See cherries here, ere cherries yet abound,

* * * * *

Scattering like blooming maid, their glances round,"

—to the "cries of London!" and our own "cries for cherries!"—to our anxiety to get a glance of the London barrow-woman, with

"Her hair loose curled, the rest tucked up between
Her neatly frill'd mob-cap, was scarcely seen;
A black chip-hat peculiarly her own,
And ribbon puff'd around the small flat crown
Puff'd to her head dress, gave her blooming face
A jaunty openness and winning grace."

Such was her dress, as she passed through the streets and cried

"Round and sound,
Two pence a pound,
Cherries! rare, ripe cherries."

"Cherries a ha'penny a stick!
Come and pick; come and pick
Cherries! big as plums!
Who comes? who comes?"

In those days there were "white hearts" and "real black hearts,"

But no "Black Tartarians" from Lynn,
By Otis Johnson; in truth "as big as plums,"
Nor "Downer's red," nor "Downing's red cheek!"
To please the taste or charm the "fancy,"
Nor Salem's witch—"Sweet Montmorency."

This exhibition of Cherries will be the last of the present season, with the exception, probably, of the Sweet Montmorency, and a few very late varieties.

The specimens of the "Black Eagle," furnished by the Hon. B. V. French, of Braintree, were made the standard to test the relative merits of the cherries presented on this occasion, to the Committee. Although many of the other varieties rank deservedly high in the estimation of the horticulturist, yet no cherry, in the opinion of the Committee, is of higher or better flavor than the Black Eagle.

"Downer's Late" is also a cherry of great excellence.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting of this Society was held as usual on Tuesday evening, August 17, 1847. The President in the chair. The most interesting objects in this evening's display, were the splendid Grapes from the President's graperies, and from the garden of the institution of the "Sisters of the Sacred Heart," near Andalusia. There were other fine fruits shown—Nectarines by Mr. Carpenter's gardener, Germantown, and by John Sherwood, Andalusia; also beautiful Plums, Pears and Apples. The vegetables shown by A. Fulton, Isaac B. Baxter, and Miss Graiz, betoken a favorable season for the culinary supply.

Premiums were awarded as follows:—

By the Committee on Plants and Flowers.—For the best three named specimens of hot-house plants; for the second best ditto; and for the best three named specimens of green-house plants, each to Archibald Henderson, gardener to Thos. W. Smith. For the best indigenous plants, and the best bouquet, to Robert Kilvington. For the second best bouquet, to A. Henderson. For the best basket of cut flowers, to Andrew Dryburgh. For the second best to Peter Raabe; and a special premium of two dollars to Alex. Parker, for plants in pots; and others of one dollar each, for bouquets, to A. Henderson, Patrick Gallagher and Ben Daniels, gardener to C. Cope.

By the Committee on Fruits.—For the best Grapes of black variety, (Black Hamburg,) to W. Westcott, gardener to the institution of the Sisters of the Sacred Heart. For the second best, (Black Hamburg,) to Ben Daniels, gardener to C. Cope. For the best white (Frontignac,) to W. Westcott. For the second best (Sweet water,) to B. Daniels. For the best Nectarines (Temple,) to Wm. Sinton, gardener to Geo. W. Carpenter. For the second best (Downton,) to John Sherwood. For the best Plums, (Bolmar's,) to Isaac B. Baxter.

Its sweet and luscious flavor should obtain for it, as it richly deserves, "a place in every garden."

A seedling cherry (probably from the Black Eagle,) by the Messrs. Hyde, of Newton, fully sustains the opinion expressed by the committee last season.

Capt. J. S. Sleeper, of Roxbury, presented a seedling Cherry of good size, but not fully ripe; it has somewhat the flavor of Downer's Late, from which it probably originated. Another season, when the fruit is quite matured, we should like to try other specimens.

Wm. Quant, presented a seedling Cherry, raised by Mr. Harback, of Brookline. The fruit is large, flesh firm, coarse and deficient in flavor.

Fine specimens of the Black Tartarian (extra large,) Florence, Napoleon Bigarreau, Black Heart, and ——— (?) by Otis Johnson, of Lynn.

A large box of Downer's Late, by S. Walker, Roxbury.

Several boxes of fine specimens of Cherries, by Josiah Richardson, of Cambridge.

Three boxes of Cherries, by Capt. Geo. Walsh.

Dr. John C. Warren, of Boston, presented specimens of a red apple (past eating,) also two fine pears of last year's growth. The pears were in fine order and of pleasant flavor; the mode of keeping, as also the name of the variety, were unknown to the Committee, who would like to receive further information on this subject.

Currants—fine specimens of White and also Red Dutch, by S. A. Walker, Brookline; Anson Dexter, Roxbury; Josiah Richardson, Cambridge, and W. & R. Williams.

Figs, large and fine, but not ripe, by N. Stetson, Esq., of Bridgewater.

Grapes—by John Fisk Allen, Salem, very fine specimens of ten varieties of Grapes, some extra fine berries of Wilmot's Black Hamburg and a splendid bunch of White Nice crowned his display.

Melon—A high flavored specimen by Mr. Wm. Quant, from the garden of Hon. T. H. Perkins.

Mulberries—By the Messrs. Winship, Brighton, variety Canton or Alpine, (very large.)

Peaches—Four dishes (fine) by Capt. Macandry, of Dorchester, and one dish by John F. Allen, of Salem.

Raspberries—Franconia, Fastolf, Victoria (new,) and white Thimbleberries, from the garden of J. L. L. F. Warren, Brighton. Extra fine specimens of the Fastolf by the Messrs. Hovey of Cambridge. By Vice President Cheever Newhall, fine specimens of Knevett's Giant.

Strawberries—Fine White Alpine by J. L. L. F. Warren, Brighton.

For the second best (Bolmar's,) to Edwin Meredith. For the best Pears, to Patrick Gallagher, gardener to Miss Gratz. For the second best, to Thomas Maclean, gardener to Sam'l R. Simmons. For the best Apples, (Ladies' blush,) to John Perkins, Moorestown, N. J. For the second best Apples, to P. Gallagher. And a special premium of one dollar for a jar of Figs preserved in spirits. The Committee noticed with great pleasure, the quantity and variety of Grapes displayed on this occasion, an encouraging evidence of the growing interest in this department.

By the Committee on Vegetables.—For the best and most interesting display of Vegetables, to Anthony Felten. For the second most interesting, to Jno. Austin, gardener to Isaac B. Baxter. For the third most interesting, to Patrick Gallagher. And a special premium of one dollar to John Austin, gardener to I. B. Baxter, for a fine display of Red Cabbage.

The Corresponding Secretary reported letters from other Societies reciprocating invitations to visit autumnal exhibitions by delegations, which were read.

On motion, ordered, that a committee of five be appointed to take into consideration, with power to act, the selection of a proper person to collect Horticultural and other objects in Mexico, as a favorable opportunity is now afforded; also that the sum of five hundred dollars be appropriated to carry out that desirable object.

The names of the members composing delegations, to visit the autumnal exhibitions of other societies, were announced.

The Secretary reported that Dr. Wm. Darlington, of Westchester, had presented to the Society a copy of his recent work on Botany for Farmers. On motion of Library Committee, ordered, that the thanks of the society be tendered to the donor.

Members elected.—Wm. H. Adams, Alex. Dandurand, and Thomas Duchard.

THO. P. JAMES, Rec. Sec.

THE
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JOURNAL OF RURAL ART AND RURAL TASTE.

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THERE are few persons, among what may be called the travelling class, who know the beauty of the finest American country seats. Many are ignorant of the very existence of those rural gems that embroider the landscape here and there, in the older and wealthier parts of the country. Held in the retirement of private life, they are rarely visited, except by those who enjoy the friendship of their possessors. The annual tourist by the railroad and steamboat, who moves through wood and meadow and river and hill, with the celerity of a rocket, and then fancies he knows the country, is in a state of total ignorance of their many attractions; and those whose taste has not led them to seek this species of pleasure, are equally unconscious of the landscape-gardening beauties that are developing themselves every day, with the advancing prosperity of the country.

It has been our good fortune to know a great number of the finest of these delightful residences, to revel in their beauties, and occasionally to chronicle their charms. If we have not sooner spoken at large of MONTGOMERY PLACE, second as it is to no seat in America, for its combination of attractions, it has been rather that we were silent—like a devout gazer at the mar-

vellous beauty of the Apollo—from excess of enjoyment, than from not deeply feeling all its varied mysteries of pleasure-grounds and lawns, wood and water.

MONTGOMERY PLACE is one of the superb old seats belonging to the LIVINGSTON family, and situated in that part of Dutchess county bordering on the Hudson. About one hundred miles from New-York, the swift river steamers reach this part of the river in six hours; and the guest, who leaves the noisy din of the town in the early morning, finds himself, at a little past noon, plunged amid all the seclusion and quiet of its leafy groves.

And this *accessible* perfect seclusion is, perhaps, one of the most captivating features in the life of the country gentleman, whose lot is cast on this part of the Hudson. For twenty miles here, on the eastern shore, the banks are nearly a continuous succession of fine seats. The landings are by no means towns, or large villages, with the busy air of trade, but quiet stopping places, serving the convenience of the neighboring residents. Surrounded by extensive pleasure grounds, fine woods or parks, even the adjoining estates are often concealed from that part of the grounds around the house, and but for the broad Hudson, which forms

the grand feature in all these varied landscapes—the Hudson always so full of life in its numberless bright sails and steamers—one might fancy himself a thousand miles from all crowded and busy haunts of men.

Around MONTGOMERY PLACE, indeed, this air of quiet and seclusion lurks more bewitchingly than in any other seat whose hospitality we have enjoyed. Whether the charm lies in the deep and mysterious wood, full of the echo of water spirits, that forms the northern boundary, or whether it grows out of a profound feeling of completeness and perfection in foregrounds of old trees, and distances of calm serene mountains, we have not been able to divine; but certain it is that there is a spell in the very air, which is fatal to the energies of a great speculation. It is not, we are sure, the spot for a man to plan campaigns of conquest, and we doubt even whether the scholar, whose ambition it is

“ To scorn delights,
And live laborious days,”

would not find something in the air of this demesne, so soothing as to dampen the fire of his great purposes, and dispose him to believe that there is more dignity in repose, than merit in action.

There is not wanting something of the charm of historical association here. The estate derives its name from GEN. MONTGOMERY, the hero and martyr of Quebec, (whose portrait, among other fine family pictures, adorns the walls of the mansion.) MRS. MONTGOMERY, after his lamented death on the heights of Abraham, resided here during the remainder of her life. At her death, she bequeathed it to her brother, the Hon. EDWARD LIVINGSTON, our late minister to France. Here this distinguished diplomatist and jurist passed, in elegant retirement, the leisure intervals of a life largely devoted to the service of the state,

and here still reside his family, whose greatest pleasure seems to be to add, if possible, every year, some admirable improvement, or elicit some new charm of its extraordinary natural beauty.

The age of MONTGOMERY PLACE heightens its interest in no ordinary degree. Its richness of foliage, both in natural wood and planted trees, is one of its marked features. Indeed, so great is the variety and intricacy of scenery, caused by the leafy woods, thickets and bosquets, that one may pass days and even weeks here, and not thoroughly explore all its fine points—

“ Mille arbres, de ces lieux ondoyante parure
Charme de l'odorat, de gout et des regards,
Elégamment groupés, négligemment épars,
Se fuyaient, s'approchaient, quelquefois à la vue
Ouvraient dans la lointain un scène imprévue ;
Ou, tombant jusqu'à terre, et recourbant leurs bras
Venaient d'un doux obstacle embarrasser leurs
pas ;
Ou pendaient sur leur tête en festons de verdure,
Et de fleurs, en passant, semaient leur chevelure.
Dirai-je ces forêts d'arbustes, d'arbrisseaux,
Entrelaçant en voûte, en alcove, en berceaux,
Leurs bras voluptueux, et leurs tiges fleuries ?”

About four hundred acres comprise the estate called MONTGOMERY PLACE, a very large part of which is devoted to pleasure grounds and ornamental purposes. The ever varied surface affords the finest scope for the numerous roads, drives, and walks, with which it abounds. Even its natural boundaries are admirable. On the west is the Hudson, broken by islands into an outline unusually varied and picturesque. On the north, it is separated from BLITHEWOOD, the adjoining seat, by a wooded valley, in the depths of which runs a broad stream, rich in waterfalls. On the south is a rich oak wood, in the centre of which is a private drive. On the east it touches the post road. Here is the entrance gate, and from it leads a long and stately avenue of trees, like the approach to an old French chateau. Half-

way up its length, the lines of planted trees give place to a tall wood, and this again is succeeded by the lawn, which opens in all its stately dignity, with increased effect, after the deeper shadows of this vestibule-like wood. The eye is now caught at once by the fine specimens of Hemlock, Lime, Ash and Fir, whose proud heads and large trunks form the finest possible accessories to a large and spacious mansion, which is one of the best specimens of our manor houses. Built many years ago, in the most substantial manner, the edifice has been retouched and somewhat enlarged within a few years, and is at present both commodious, and architectural in character.

Without going into any details of the interior, we may call attention to the unique effect of the *pavilion*, thirty feet wide, which forms the north wing of this house. It opens from the library and drawing-room by low windows. Its ribbed roof is supported by a tasteful series of columns and arches, in the style of an Italian arcade. As it is on the north side of the dwelling, its position is always cool in summer; and this coolness is still farther increased by the abundant shade of tall old trees, whose heads cast a pleasant gloom, while their tall trunks allow the eye to feast on the rich landscape spread around it. (See *Frontispiece*.)

To attempt to describe the scenery, which bewitches the eye, as it wanders over the wide expanse to the west from this pavilion, would be but an idle effort to make words express what even the pencil of the painter often fails to copy. As a foreground, imagine a large lawn waving in undulations of soft verdure, varied with fine groups, and margined with rich belts of foliage. Its base is washed by the river, which is here a broad sheet of water lying like a long lake beneath the eye. Wooded banks stretch along its margin. Its bosom is

studded with islands, which are set like emeralds on its pale blue bosom. On the opposite shores, more than a mile distant, is seen a rich mingling of woods and corn-fields. But the crowning glory of the landscape is the background of mountains. The Kaatskills, as seen from this part of the Hudson, are, it seems to us, more beautiful than any mountain scenery in the middle States. It is not merely that their outline is bold, and that the summit of Roundtop, rising 3000 feet above the surrounding country, gives an air of more grandeur than is usually seen, even in the Highlands; but it is the *colour* which renders the Kaatskills so captivating a feature in the landscape here. Never harsh or cold, like some of our finest hills, nature seems to delight in casting a veil of the softest azure over these mountains—immortalized by the historian of Rip Van Winkle. Morning and noon, the shade only varies from softer to deeper blue. But the hour of sunset is the magical time for the fantasies of the colour-genii of these mountains. Seen at this period, from the terrace or the pavilion of MONTGOMERY PLACE, the eye is filled with wonder at the various dyes that bathe the receding hills—the most distant of which are twenty or thirty miles away. Azure, purple, violet, pale grayish-lilac, and the dim hazy hue of the most distant cloud-rift, are all seen, distinct, yet blending magically into each other in these receding hills. It is a spectacle of rare beauty, and he who loves tones of colour, soft and dreamy as one of the mystical airs of a German *maestro*, should see the sunset fade into twilight from the seats on this part of the Hudson.

THE MORNING WALK.

Leaving the terrace on the western front, the steps of the visitor, exploring MONTGOMERY PLACE, are naturally directed towards

the river bank. A path on the left of the broad lawn leads one to the fanciful rustic-gabled seat, among a growth of locusts at the bottom of the slope. Here commences a long walk, which is the favorite morning ramble of guests. Deeply shaded, winding along the thickly wooded bank, with the refreshing sound of the tide-waves gently dashing against the rocky shores below, or expending themselves on the beach of gray gravel, it curves along the bank for a great distance. Sometimes overhanging cliffs, crested with pines, frown darkly over it; sometimes thick tufts of fern and mossy-carpeted rocks border it, while at various points, vistas or long reaches of the beautiful river scenery burst upon the eye. Half-way along this morning ramble, a rustic seat, placed on a bold little plateau, at the base of a large tree, eighty feet above the water, and fenced about with a rustic barrier, invites you to linger and gaze at the fascinating river landscape here presented. It embraces the distant mountains, a sylvan foreground, and the broad river stretching away for miles, sprinkled with white sails. The *coup-d'œil* is heightened by its being seen through a dark framework of thick leaves and branches, which open here just sufficiently to show as much as the eye can enjoy or revel in, without change of position.

A little farther on, we reach a flight of rocky steps, leading up to the border of the lawn. At the top of these is a rustic seat with a thatched canopy, curiously built round the trunk of an aged pine.

Passing these steps, the morning walk begins to descend more rapidly toward the river. At the distance of some hundred yards, we find ourselves on the river shore, and on a pretty jutting point of land stands a little *rustic pavilion*, from which a much lower and wider view of the landscape is

again enjoyed. Here you find a boat ready for an excursion, if the spirit leads you to reverse the scenery, and behold the the leafy banks from the water.

THE WILDERNESS.

Leaving the morning walk, we enter at once into "The Wilderness." This is a large and long wooded valley. It is broad, and much varied in surface, swelling into deep ravines, and spreading into wide hollows. In its lowest depths runs a large stream of water, that has, in portions, all the volume and swiftness of a mountain torrent. But the peculiarity of "The Wilderness," is in the depth and massiveness of its foliage. It is covered with the native growth of trees, thick, dark and shadowy, so that once plunged in its recesses, you can easily imagine yourself in the depths of an old forest, far away from the haunts of civilization. Here and there, rich thickets of the *Kalmia* or native *Laurel* clothe the surface of the ground, and form the richest underwood.

But the Wilderness is by no means savage in the aspect of its beauty; on the contrary, here as elsewhere in this demesne, are evidences, in every improvement, of a fine appreciation of the natural charms of the locality. The whole of this richly wooded valley is threaded with walks, ingeniously and naturally conducted so as to penetrate to all the most interesting points; while a great variety of rustic seats, formed beneath the trees, in deep secluded thickets, by the side of the swift rushing stream, or on some inviting eminence, enables one fully to enjoy them.

There are a couple of miles of these walks, and from the depth and thickness of the wood, and the varied surface of the ground, their intricacy is such that only the family, or those very familiar with their course, are at all able to follow them all with



Fig 26. Rustic Seat.

any thing like positive certainty as to their destination. Though we have threaded them several seasons, yet our late visit to Montgomery Place found us giving ourselves up to the pleasing perplexity of choosing one at random, and trusting to a lucky guess to bring us out of the wood at the desired point.

Not long after leaving the *rustic pavilion*, on descending by one of the paths that diverges to the left, we reach a charming little covered resting place, in the form of a rustic porch. The roof is prettily thatched with thick green moss. Nestling under a dark canopy of evergreens in the shelter of a rocky fern-covered bank, an hour or two may be whiled away within it, almost unconscious of the passage of time.

THE CATARACT.

But the stranger who enters the depths of this dusky wood by this route, is not long inclined to remain here. His imagination is excited by the not very distant sound of waterfalls.

"Above, below, ærial murmurs swell,
From hanging wood, brown heath and bushy dell;
A thousand gushing rills that shun the light,
Stealing like music on the ear of night."

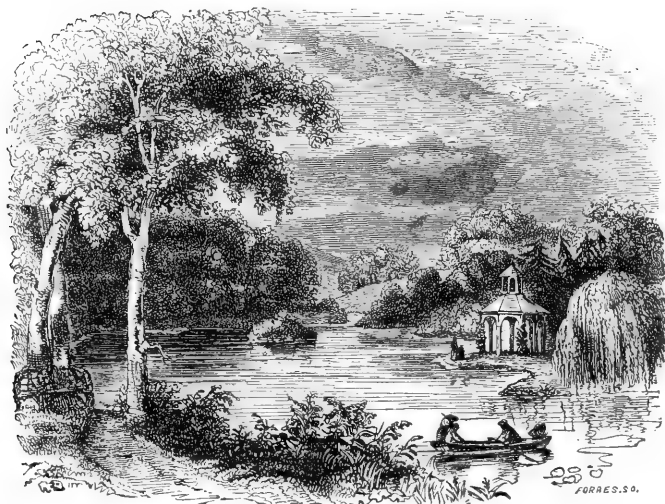
He takes another path, passes by an airy looking rustic bridge, and plunging for a moment into the thicket, emerges again in full view of the first cataract. Coming from the solemn depths of the wood, he is astonished at the noise and volume of the stream, which here rushes in wild foam and confusion over a rocky fall, forty feet in depth. Ascending a flight of steps made in the precipitous banks of the stream, we have another view, which is scarcely less spirited and picturesque.

This waterfall, beautiful at all seasons, would alone be considered a sufficient attraction to give notoriety to a rural locality in most country neighborhoods. But as if nature had intended to lavish her gifts here, she has, in the course of this valley, given two other cataracts. These are all striking enough to be worthy of the pencil of the artist, and they make this valley a feast of wonders to the lovers of the picturesque.

There is a secret charm which binds us to these haunts of the water spirits. The spot is filled with the music of the falling water. Its echoes pervade the air, and beget a kind of dreamy reverie. The memory of the world's toil gradually becomes fainter and fainter, under the spell of the soothing monotone; until at last one begins to doubt the existence of towns and cities, full of busy fellow beings, and to fancy the true happiness of life lies in a more simple existence, where man, the dreamy silence of thick forests, the lulling tones of babbling brooks, and the whole heart of nature, make one sensation, full of quiet harmony and joy.

THE LAKE.

That shadowy path, that steals away so enticingly from the neighborhood of the cataract, leads to a spot of equal, though a different kind of loveliness. Leaving the

Fig. 27. *The Lake.*

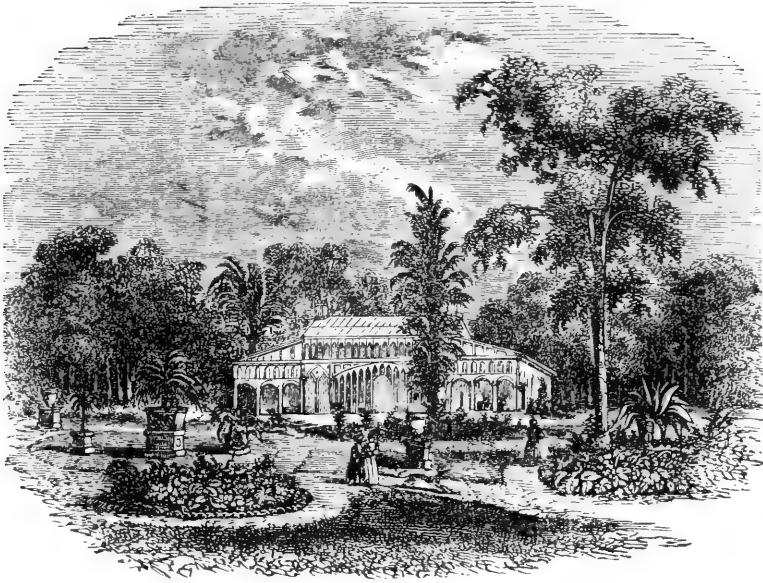
border of the stream, and following it past one or two distracting points, where other paths, starting out at various angles, seem provokingly to tempt one away from the neighborhood of the water, we suddenly behold, with a feeling of delight, **THE LAKE.**

Nothing can have a more charming effect than this natural mirror in the bosom of the valley. It is a fine expansion of the same stream, which farther down forms the large cataract. Here it sleeps, as lazily and glassily as if quite incapable of aught but reflecting the beauty of the blue sky, and the snowy clouds, that float over it. On two sides, it is overhung and deeply shaded by the bowery thickets of the surrounding wilderness; on the third is a peninsula, fringed with the graceful willow, and rendered more attractive by a *rustic temple*; while the fourth side is more sunny and open, and permits a peep at the distant azure mountain tops.

This part of the grounds is seen to the most advantage, either toward evening, or in moonlight. Then the effect of contrast in light and shadow is most striking, and the seclusion and beauty of the spot are

more fully enjoyed than at any other hour. Then you will most certainly be tempted to leave the curious rustic seat, with its roof wrapped round with a rude entablature like Pluto's crown; and you will take a seat in *Psyche's boat*, on whose prow is poised a giant butterfly, that looks so mysteriously down into the depths below as to impress you with a belief that it is the metempsychosis of the spirit of the place, guarding against all unhallowed violation of its purity and solitude.

The peninsula, on the north of the lake, is carpeted with the dry leaves of the thick cedars that cover it, and form so umbrageous a resting place that the sky over it seems absolutely dusky at noon day. On its northern bank is a rude sofa, formed entirely of stone. Here you linger again, to wonder afresh at the novelty and beauty of the *second cascade*. The stream here emerges from a dark thicket, falls about twenty feet, and then rushes away on the side of the peninsula opposite the lake. Although only separated by a short walk and the mass of cedars on the promontory, from the lake itself, yet one cannot be seen from the other; and the lake, so full of the very spirit of

Fig. 28. *The Conservatory*

repose, is a perfect opposite to this foaming, noisy little waterfall.

Farther up the stream, is another cascade, but leaving that for the present, let us now select a path leading, as near as we can judge, in the direction of the open pleasure grounds near the house. Winding along the sides of the valley, and stretching for a good distance across its broadest part, all the while so deeply immersed, however, in its umbrageous shelter, as scarcely to see the sun, or indeed to feel very certain of our whereabouts, we emerge in the neighborhood of the CONSERVATORY.

This is a large, isolated, glazed structure, designed by Mr. CATHERWOOD, to add to the scenic effect of the pleasure grounds. On its northern side are, in summer, arranged the more delicate green-house plants; and in front are groups of large Oranges, Lemons, Citrons, Cape Jasmines, Eugénias, etc., in tubs—plants remarkable for their size and beauty. Passing under neat and tasteful archways of wirework,

covered with rare climbers, we enter what is properly

THE FLOWER GARDEN.

How different a scene from the deep sequestered shadows of the Wilderness! Here all is gay and smiling. Bright parterres of brilliant flowers bask in the full daylight, and rich masses of colour seem to revel in the sunshine. The walks are fancifully laid out, so as to form a tasteful whole; the beds are surrounded by low edgings of turf or box, and the whole looks like some rich oriental pattern or carpet of embroidery. In the centre of the garden stands a large vase of the Warwick pattern; others occupy the centres of parterres in the midst of its two main divisions, and at either end is a fanciful light summer-house, or pavilion, of Moresque character. The whole garden is surrounded and shut out from the lawn, by a belt of shrubbery, and above and behind this, rises, like a noble framework, the background of trees of the lawn and the Wil-

derness. If there is any prettier flower-garden scene than this *ensemble* in the country, we have not yet had the good fortune to behold it.

It must be an industrious sight-seer who could accomplish more than we have here indicated of the beauties of this residence, in a day. Indeed there is enough of exercise for the body, and enjoyment for the senses in it, for a week. But another morning may be most agreeably passed in a portion of the estate quite apart from that which has met the eye from any point yet examined. This is

THE DRIVE.

On the southern boundary is an oak wood of about fifty acres. It is totally different in character from the Wilderness on the north, and is a nearly level or slightly undulating surface, well covered with fine Oak, Chestnut, and other timber trees. Through it is laid out the DRIVE; a sylvan route as agreeable for exercise in the carriage, or on horseback, as the "Wilderness," or the "Morning Walk," is for a ramble on foot. It adds no small additional charm to a country place in the eyes of many persons, this secluded and perfectly private drive, entirely within its own limits.

Though MONTGOMERY PLACE itself is old, yet a spirit ever new directs the improvements carried on within it. Among those more

worthy of note, we gladly mention an *arbo-retum*, just commenced on a fine site in the pleasure grounds, set apart and thoroughly prepared for the purpose. Here a scientific arrangement of all the most beautiful hardy trees and shrubs, will interest the student, who looks upon the vegetable kingdom with a more curious eye than the ordinary observer.

The whole extent of the private roads and walks, within the precincts of MONTGOMERY PLACE, is between *five and six miles*. The remarkably natural beauty which it embraces, has been elicited and heightened everywhere, in a tasteful and judicious manner. There are numberless lessons here for the landscape gardener; there are an hundred points that will delight the artist; there are meditative walks and a thousand suggestive aspects of nature for the poet; and the man of the world, engaged in a feverish pursuit of its gold and its glitter, may here taste something of the beauty and refinement of rural life in its highest aspect, and be able afterwards understandingly to wish that

"One fair asylum from the world *he* knew,
One chosen seat, that charms with various view.
Who boasts of more, (believe the serious strain,)
Sighs for a home, and sighs, alas! in vain.
Thro' each he roves, the tenant of a day,
And with the swallow wings the year away."

ROGERS.

STARTING BUDS TOO SOON.—A correspondent in the Genesee Farmer thinks he has made a discovery, by the accidental breaking off of the stock just above the inserted bud, which caused the bud to grow immediately. He will probably discover next spring that the winter has totally killed the shoot, if it is a peach, apricot or nectarine; and by the end of another summer, that he has gained nothing in growth, if hardy like the apple,

a few inches growth this year, rather stunting than accelerating the growth.

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PROFITS OF FRUIT.—P. BARRY, of the Genesee Farmer, says, that when in the garden of GEO. HOADLEY, Esq. of Cleveland, the present season, the crop of a single cherry tree was sold for \$10. The tree was eleven years old, and not larger than seven year planted trees at Rochester.

THE CULTIVATION AND PROPAGATION OF AZALEAS.

BY DR. WM. W. VALK, FLUSHING, L. I.

DEAR SIR—In the June number of "*Flore des Serres et des Jardins de l'Europe*," (which as usual contains ten exquisite plates,) there is an admirable article by M. LOUIS VAN HOUTTE, the editor, with the above title. As I think it cannot fail to be interesting to your numerous readers, I send you a translation. It is not always easy to give the exact sense in rendering horticultural subjects, and to this cause must be attributed such peculiarities of expression as the reader may notice.

Azaleas, regarded as ornamental plants, like Rhododendrons, Camellias, and even as Roses, have acquired no little horticultural importance. Therefore, I believe amateurs will be pleased to have me enter into the relative details of the method of cultivation which is best suited to them.

Soil.—They succeed best in a light compost, rich in humus, formed of a mixture of equal parts of leaf-mould, well rotted, and sandy heath-earth. This compost is renewed as often as the growth of the plants appear to demand it.

Potting.—Usually they are planted in well drained pots, to avoid the stagnation of the rain, or the watering, which occurrence is fatal to the health of Azaleas. Pots with straight sides, present a natural obstacle to this stagnation; the delicate root fibres have more freedom, and are less obnoxious to dampness; on the other hand, the pots must be changed when the fibres collect at the bottom.

Exposure.—The green-house should face the east or south, though the north is better; and it ought to be perfectly airy.

Putting out.—In the beginning of June, or when the spring has fairly opened, all the

Azaleas are put out, placing them behind a live hedge in steps, (or shelves,) and facing the morning sun. The pots are plunged, and a piece of tile or slate placed beneath them, to prevent the entrance of earth-worms. Here they are freely watered overhead and at the roots (in the evening) during hot weather, and while they continue growing. When growth has ceased, the supply of water is diminished; the soil is then to be kept only damp, and if the weather is wet, all watering must be withheld, at the time of housing them.

Their summer quarters should be as warm and light as possible, without exposure to the direct rays of the sun. On the other hand, too much shade causes them to grow weak, and to form very few flower buds. The essential point is to give them a just medium between shade and sunshine.

Putting them in.—Towards the last of September or beginning of October, Azaleas must be housed. The nights are then chilly and the white frosts dangerous. While the weather is fine, they should be cut into a proper shape, having already had time to form new shoots and flower buds. When removed from the ground, the pots should be washed, (neatness is the charm of green-houses,) and the plants arranged in the most convenient manner on the staging of the house.

Warmth.—The best method is by the *thermosiphon*, (a peculiar mode of heating by hot water,) but the fire should not be ignited until the thermometer indicates 0 of Reaumur (the freezing point.) Azaleas are not injured by cold at 2 R., and even -2, but a relative heat that will set the sap in motion is highly injurious, and causes them

to be weak and etiolated. Heat is not required except it be to remove dampness, resulting from the atmosphere, (as fogs, long rains, or to dissipate a slight frost, carefully regulating the temperature, that it goes not above 38 or 40 degrees Fahrenheit; more heat would be detrimental. When the weather allows, the sashes and doors of the house should be opened, particularly when the sun shines, an occurrence very rare in our climate (Belgium) during the winter. This should be especially attended to when there is no frost.

Pruning.—After Azaleas have made their growth, they should be tied up neatly to give a better effect to their flowers. Cut off all flaring branches just at the old wood. It is at this period that a general repotting is recommended, to secure a proper refreshing of the roots. The application of a generous and new soil invigorates the radicles, the plants soon cover themselves with fresh leaves and a profusion of flower buds, recompensing for the care which has been given them.

Some Azaleas are naturally dwarf, therefore these bear very little pruning; such are *A. indica lateritia*, *variegata*, *gledstanesii*, and they require a little more heat than the others. In consequence of this, keep them in a warm green-house, or give them the warmest places in a cold one.

Diseases of Azaleas.—In vegetable life, there are but few other diseases than *caries* (rottenness of the roots,) *chlorosis* (jaundice,) and the languor immediately preceding death. The first and second are caused by an excess of water either from rain or artificially. If the disease has not progressed too far, the remedy will be found in a removal of the cause producing it, and by a partial or entire repotting, then keeping the plants in the shade or under a frame. An excess of dryness becomes a prominent cause

of languor, and is in many cases difficult to remove. Here water must be used with the greatest caution, for it is almost sure to kill. If the dry state has been prolonged, repot the plant in fresh earth, cut it in moderately, and keep it from the influence of the external atmosphere. Kept too warm, Azaleas are attacked by the Red Spider, (*Acarus*), which will soon increase and kill the plant by exhausting its juices, if the leaves are not washed with care, from time to time, and frequently syringed, an operation indispensable, and alike applicable to plants in perfect health.

Azaleas in Rooms.—It is not at all surprising that plants with such splendid and brilliant flowers, should have gained access to salons and palaces. But these golden ceilings, (*lambris dorés*) are fatal to them, if the master's eye is not vigilant in continuing the habitual cares of the gardener! Therefore the rooms should be aired as much as possible through the day; at all events, the Azaleas should be placed near the windows, and carefully watered so as to preserve their foliage and flowers fresh. As soon as the amateur perceives the least ailment in the Azaleas which decorate his rooms, although the flowering be not done, he should, from interest, as well as for the preservation of his plants, send them to the common physician, (*médecin ordinaire*), that is to say the gardener.

Such are, *grosse mode*, the general cares, required for the preservation and raising of Azaleas. The places of exposure and relative difference of climate, must necessarily be regulated by the changes of temperature, still based upon the suggestions of my experience and that of most practical cultivators. These modifications are, of course, appreciable to the sagacity and vigilance of amateurs, where the climate is different from that of Belgium or the north of France

THE PROPAGATION OF AZALEAS.

The instruction which I have presumed to offer on the subject of the Azaleas of India, for the benefit of young amateurs, (and only for them I write, not pretending to dictate to accomplished cultivators,) would not be at all complete, if I omitted the subjects of increase or propagation which best suits these plants. I shall be as brief as the nature of the subject permits, so as to be understood.

Grafting.—The modes of grafting most practised with Azaleas, are branch grafting, termed *à cheval*, *en fente*, or *en placage*. They are also grafted, but more rarely, *en approche*, by approach, or *par copulation*, (inarching,) the most frequently *en herbe*. (These terms may be thus translated, *à cheval*, saddle grafting; *en fente*, cleft grafting; *en placage*, veneer grafting; *en approche*, by approach; *en herbe*, herbaceous grafting, or when the wood is green.) The operation may be performed at any season, but the most favorable time is the latter part of May or beginning of June. The young shoots must have attained a certain maturity, a circumstance depending entirely on the temperature applied during the winter, whether cold or warm, and which necessarily advances or retards their growth. The grafted plants should be placed in a green-house, or under frames, whichever is preferred, and covered with a bell-glass, on slight hot-beds, or they may be kept very close until the perfect union of the parts, nor must any air be given them, until full vegetation is perceived.

The stocks best adapted to receive the grafts of the finest varieties, are in preference to other kinds, the *Azalea indica phenicea*, or the wild stock of the Azaleas of India, and if these cannot be had, the *Rhododendron ponticum*. I shall briefly give a description of the different methods of graft-

ing practised. The grafting knife should be perfectly clean and sharp.

Grafting à cheval.—The graft is cut at its base in a prolonged acute angle. The stock cut at the head, receives the same angle in the opposite direction, that is an acute angle projecting.

Grafting en fente.—The graft is cut thin on both sides, at an acute angle, or lengthened wedge; the head of the stock is simply notched vertically (with dexterity and very slightly,) to receive the wedge of the graft.

Grafting en placage.—The graft and stock are notched vertically and squarely, each receiving equal notches, to permit them to join completely. This mode is to be preferred.

Inarching or Grafting par copulation.—The end of the stock is cut sloping, that of the graft the same, very even, and in such a manner that the two portions will accurately fit one another.

Grafting en approche.—On the stock a vertical cut is made more or less deep, with a notch also of some depth, and a part of the head is cut off, so as to carry the sap into the graft. This is cut in the same manner precisely, quite as deep, but leaving the notch jutting out, so that the two parts can be perfectly joined. This method is but seldom used, because of its inconvenience, as it is necessary for the two plants to be side by side until union is effected, after which the two plants are separated by cutting off the stock.

Such are, in a few words, the different methods of increasing Azaleas by grafting. I may add, that the stock can be large without inconvenience, indeed this is usually the case; the different cuts should be made with great care and neatness, without being frayed, (*sans éraillures*,) their surfaces very equal, so that they may be exactly ap-

plied to each other, and the wood and bark of the two portions be in perfect contact.

2. *Cuttings*.—Before the growth has completely ceased, that is near the end of June, the young shoots of the Azaleas are cut off about three inches in length, and well furnished with leaves; these make the cuttings. Some pans with large gravel at the bottom, and filled evenly with sandy heath-earth finely sifted, are to be in readiness for them. The end of each cutting is divided just at the base of a leaf-bud, and planted in quincunx, putting them in with a planting stick about three-fourths of an inch long, pressing the soil around them firmly with the end of the finger.

Thus planted, the pans are placed in a moderate hot-bed in the green-house, or better still, under a frame, and covering them with a bell-glass. I have used with advantage for my Azalea cuttings, small wooden boxes about two feet long, one foot wide, and five inches deep, (six including the bottom board,) which is pierced with holes for the drainage. I put at the bottom flint stones three-quarters of an inch in depth for drainage, and on these two inches of well sifted heath-earth. I then plant my cuttings, and cover the box with a plate of glass. This method, which I believe to have originated in my establishment, seems to me preferable to bell-glasses, because the small drops of water, caused by the exhalations of the cuttings, fix themselves on the glass, and fall back perpendicularly, thus moistening the earth equally, without running in furrows, as under bell-glasses, which soon decomposes the soil into a kind of mud. It will be sufficient to open the glass once a day, to avoid an excess of dampness, likely to be produced by these drops of water.

Potting them off.—As soon as the cuttings are well rooted, which you may know by

their vegetation, prepare to pot them. Each cutting is planted separately in a small pot, in good heath-earth, simply sifted. They are then placed in a spent hot-bed, under a frame, which is better than bell-glasses, until they become a little more developed; then commence giving them air little by little, until they can bear it fully, repot them in larger pots, give plenty of air for six or eight months, after which treat them as old plants.

3. *Ring and Common Layering*.—I should not omit these two modes of increase, which are well known, but which are very little practised in propagating Azaleas. As it may be agreeable, however to the amateur to employ them, the operations are thus executed.

The first method is by raising to the height of the branches which are to be layered, small pots with a slit in the side, (to facilitate the introduction of the branches;) the opening is then closed with a small piece of glass cut to fit; the pots filled with heath-earth, and fixed securely, attaching them to their supports with small wire. Before this is done, however, a small ring of bark is cut from the branches, a little below the point where it enters the pot.

This operation is performed either in the open air or in the green-house, being careful to keep the soil in the pots a little damp. Three months will usually suffice to root the layers.

The second method requires the Azaleas to be planted in the open ground or under a shady frame, inclining the stem towards the soil. Handle the branches carefully and lightly so as not to break them, and bend them down at an acute angle. The part which is to be fixed in the soil is then cut horizontally and vertically, which permits its bending easily. It is then fixed in the earth with a small forked stick, and the

earth covered with a light layer of moss to keep up a proper degree of moisture. This method is much more expeditious than the former.

4. *Increase by Seed*.—At the commencement of autumn the seeds of Azaleas are fully ripe. They are then gathered, and subsequently sown in January or February. Fill some small pans, well drained, with finely sifted heath-earth, and press it lightly on the surface. The fine seeds are then sown evenly, without any other covering than a light coat of fine sand. Thus fixed, the pans are covered with glasses to keep in a little constant humidity, and placed on a hotbed under a frame, or in a cold or temperate green-house, in the shade, and as near the glass as possible.

The seeds quickly vegetate. As soon as the young plants have made one or two leaves (besides the seed leaves,) they must be transferred to other pans, leaving between them sufficient space for their further development. Give them a little heat to hasten and strengthen their shoots. Then as soon as they are four or five inches high, pot them singly in pots proportioned to their size. Continue the same temperature, giving a little air occasionally, so that they may become gradually accustomed to it, and then treat them as old plants.

Artificial Fecundation, or Hybridization.—By budding, grafting, and the two last methods of increase which I have just described, you propagate purely and simply the varieties or species which you possess. But then this handsome species would remain stationary, and soon its sameness would tire the most zealous amateur, if two other methods did not produce immense results, by creating a new and pleasing taste, quite natural for such elegant plants.

These are, by the seed and *artificial* fecundation, called also *hybridization*. I have already described the first, and will say a few words about the second.

Artificial fecundation or hybridization should only be practised between handsome varieties or species opposed in colour and form, to procure an intermediate progeny, or sometimes diametrically opposite. It requires sagacity, calculation and a sufficient knowledge of the subject, so as not to fail, or to create insignificant varieties, inferior to their parents. Thus you willingly cross the varieties with white flowers, with those that are red, the variegated with the one coloured, &c.

It is well known that artificial fecundation consists in the application of the pollen of one variety to the pistil of another. The precise moment is chosen of the opening of the anthers; cut away the whole flower, or only the female anthers, and rub them lightly on the top of the pistil (stigma) of that which has been cut, in such a manner that it may be perfectly daubed (*barbouillée*) with antheral powder. Before this operation another preparatory to it should be accomplished. It consists in cutting off the stamens at the moment the flowers expand, and before the opening of the anthers. Without this precaution, the fecundation would not succeed, or would not be perfect because of the admixture of the pollen.

It is in thus crossing the Azaleas of India, properly so called, with others, or with *Rhododendrons*, that we obtain those elegant varieties which have been so much admired, and which constitute the principal decoration of our green-houses in the spring of the year.

WM. W. VALK, M. D.

Flushing, L. I., Aug. 1847.

CULTURE OF THE PEACH TREE.

BY A PENNSYLVANIAN.

MR. DOWNING—As I deem the results of experiments in horticulture of more general interest than the promulgation of theories, I venture to send you some brief notes of my experience in the cultivation of the Peach tree.

In your most valuable standard work on Fruits, you have, I think, proved very plainly that the disease of the Peach tree, called the *Yellows*, is caused by bad cultivation in a light or poor soil. I am very well convinced that other maladies to which this fruit tree, is subject are the result of the same causes. It is the common and popular belief, that the Peach tree should always be planted in a light sandy soil; nay, that a thin sandy loam is the best for it. I suppose this opinion has arisen from the circumstance of the low price at which many tracts of land in New-Jersey, Delaware, and Maryland, can be turned into peach orchards, and that too *profitably*.

But it is well known, that there peach orchards are short-lived. From three to five years is their average duration, and most planters do not expect to get more than one or two crops of fruit from their trees. They then give them up as diseased or worn out, and plant new orchards.

It is well known, also, that such is not the natural duration of the Peach tree; that in the deep soil of the Ohio the trees bear and grow well from ten to twenty years; and the natural existence of the Peach tree in our climate, is at least a dozen years of fruitfulness.

What I gathered some years ago from this reasoning is, that we make a mistake in this part of the Union, when we plant orchards with the expectation of raising

the *finest fruit*, or *healthy long-lived trees* on *light thin soil*.

It is my own belief, based on some little observation and practice, that no soil will grow the best peaches, i. e. the largest and finest flavored—except it is good *wheat land*.

I have some land in this county of the character usually selected for Peach orchards, and I have grown a limited orchard for many years past, with the usual success, viz., tolerable fruit and short-lived trees. About eight years ago, after visiting a neighbor in the upper part of New-Jersey, where the soil is good strong wheat land, I determined to change my plan of raising them altogether. I considered that we mistook the nature of this fruit tree; that it really requires more generous culture.

Choosing a tolerably good field on my farm, I set about preparing it for an orchard. This was in October. It was on a fair sandy loam, rather light, on a subsoil of gravelly loam.

My idea was to deepen and enrich the soil of this field before planting the trees. It is not, I believe, considered well to subsoil where the underlayer is gravel. But I made the experiment nevertheless, as it was, I thought, my only chance for decided success.

The trees in this orchard were to be planted sixteen feet apart. As labor and manure were both of consequence to me, I determined to make my first experiment by subsoiling only half the area to be set out with trees.

This I did by plowing and thoroughly subsoiling straight strips across the whole field, eight feet wide. The subsoil plough

followed after the common plough, and had two yoke of cattle to draw it. By this means I loosened and stirred up the gravelly substratum to the depth of sixteen inches; it became, also, considerably mingled with the top soil. The land was in tolerably good order, but I had it dressed with a strong lime compost, (lime and peat,) just before the subsoiling was begun.

The remaining strips of the field were simply plowed in the common way, and the whole harrowed together.

I then planted the rows of trees, as nearly as I could, in lines running through the middle of the subsoiled strips. This gave them a prepared surface four feet wide on each side, and sixteen feet in the row from tree to tree.

The trees grew more vigorously the first season after transplanting, than I ever saw any do before. Here and there as I saw a sickly looking one, during this and the next two years, I immediately took it out, and filled its place with another of healthy growth.

The result of my experiment has been most satisfactory. The orchard is in excellent health and a good bearing state, though it has been in bearing now to the sixth

year. The *flavor* of the peaches raised in it, is *much finer than I have ever raised* otherwise in the same soil. And a small orchard set a year since on a joining farm, in a soil quite like my own, but planted in the ordinary way—that is on thin light soil, unprepared, bore its two crops of fruit, then failed, and had to be rooted out.

There is no doubt but my success would have been more complete if I had subsoiled the *whole* of the land. This I could not afford to do at the time, but those having capital would of course do so. I remarked during the first three years, when I raised root crops in my orchard, that the growth of the crops was a great deal finer, and the yield nearly a third more on the strips that were prepared or subsoiled, than on those that were only surface ploughed.

Your readers may draw their own conclusions. I will add, before finishing my letter, that after some little practice, I am strongly in favor of the mode of *shortening in* the Peach, which you have so strongly urged upon all cultivators of this fruit. It appears to me to be a great improvement upon all other modes of pruning the peach tree. Your friend. S.

Bucks Co., Pa., Sept., 1847.

A HINT TO PLANT GROWERS.

BY A CONSTANT READER.

DEAR SIR—I wish to send you a few lines concerning a mode of growing plants in pots, that I am induced to think of the very first importance. It may be known and practised by some of your readers in other parts of the country; but as those to whom I have mentioned it here are entirely unacquainted with it, and as, with me, they agree that it is a great thing in green-house cultivation, I leave it to your own judgment

to make it known to those of your readers interested in exotics.

What I allude to is the use of *roasted turf* in the soil used for all green-house plants. It is, you know, the custom of many plant-growers to screen or sift all their compost for pots, thereby making it all of one uniform size; and no little pains is taken to mix the different kinds of soils so as to obtain just what is deemed es-

sential to the different tribes. I have myself been in the habit of following this practice for several years past, but I can assure you that since I have taken up the *roasted turf*, I find all my plants to thrive so well upon it, that I have abandoned the mixed compost system entirely. All that I use now is roasted turf and good fresh loamy soil, or roasted turf, loamy soil and a little peat, when heaths, etc., are to be grown.

After putting some potsherds in the bottom, for drainage, I fill up the pot one third with the rough pieces of roasted turf, broken as large as eggs. The remainder of the pot is filled with equal parts of loamy soil, and bits of the turf, the latter chopped up or crumbled rather coarsely. I find on turning out a plant that has been growing for several months in this way, that the bits of roasted turf in the bottom are a mass of vigorous fibres, from which I gather that this substance is full of nutrition for plants. It gives the foliage a very rich dark-green colour; Cape Jasmines, Camellias, Oranges and Lemons, and all plants whose foliage is apt to turn yellow without any apparent cause, grow with rich deep green leaves, when potted with the *roasted turf*.

The use of this material is not original with me, as I first obtained a knowledge of it from RIVERS' *Rose Amateur's Guide*, in which he recommends it for growing *Roses in pots*, in the following terms: "I have used with much success turf roasted on a sheet of iron, placed in temporary brick work, under which a moderate fire is kept: about an hour's roasting is sufficient."

My way of roasting it is very simple. I cut sods of the usual thickness, from an old common or lane, where the turf is good. I have a plate of old cast iron, about three feet square, which I obtained from a foundry in the city. This makes the top of my

furnace, and the sides of it are a couple of brick walls, eight inches wide, laid up without mortar, say two and a half feet high. Upon these temporary walls, which make the sides of the furnace, I lay the iron plate. The whole thing is put up in twenty minutes, in any convenient spot out of doors, and the materials are taken down and laid away as readily till next wanted, when the operation is over. The fire is made of any refuse brush or faggots that the garden may afford. The operation of roasting is nothing more than charring the under side of the turf, and a pretty good heap of turf can be charred in a day; after which, what is not used at once should be laid by under cover till wanted.

It is impossible for me to overrate the good effects of the *roasted turf*; and I hope you will call the attention of your numerous readers to it, for I am confident that they will be much gratified and pleased with a trial of its virtues. If you wish it, you are at liberty to use any of the foregoing remarks. Truly, etc.

A CONSTANT READER.

Philadelphia, Aug. 27, 1847.

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REMARKS.—We have no doubt of the most excellent results from the use of the *roasted turf*. The charred roots and grass not only act beneficially in condensing within their pores gaseous combinations, serving directly as food for plants, but the soil itself, when subjected to high temperature, becomes altered in character, is rendered capable of absorbing æriform food for plants, which renders it more fertile than before. The well known practice of burning clay soils, is based upon this principle.

We have been in the habit, for three or four years past, of using the freshly charred refuse of the garden—a mixture of green and dry weeds, bits of wood, roots of trees, etc., to mingle with the soil in transplant-

ing favorite trees, and find it attended with very satisfactory results.

We have no doubt that the charred turf is increased in value by being cut from strong loamy or clayey, instead of sandy soil, on account of the more beneficial ac-

tion of heat on soils containing a good deal of alumina ; and also that it is most powerful in its effects, when used directly after it has been roasted, and before it loses, by the action of moisture, any of the gaseous combinations which it has formed.—ED.

MEMORANDA ON PEARS.

BY THE LATE SAMUEL G. PERKINS, BOSTON.

I SEE by your horticultural journal, that you invite discussion on the comparative merits of different kinds of fruit, particularly pears, as the best mode of settling or establishing a useful and correct nomenclature.

The question has frequently been asked me by gentlemen who are beginning to cultivate fruits, "Which is the best pear?" and as there is no such thing as answering this question *directly*, I have answered that I could not tell, as it depended on so many circumstances of which I could not be supposed to have any knowledge.

In the first place, there are Summer, Autumn, and Winter pears, and each season calls for fruit of totally different properties. Then there are as many different tastes almost, as there are men ; some like a sweet, luscious and aromatic fruit, as the Seckel ; others like better the spirited, delicate and delicious flavor of the St. Ghislain. Then you have many that prefer the Gansel's (or Brocas) Bergamot, and other pears of that rich delicious flavor, without being too sweet or too spirited. The White Doyenné [or St. Michael] has always been a decided favorite with many when in perfection, and the Louise bonne de Jersey is esteemed inferior to none of the autumn fruits.

But the pear most esteemed in our market is, I believe, (when you speak of summer and autumn fruits,) the pear commonly

known as the Bartlett. This pear, a wilding of 1770, in Berkshire, Great Britain, was sent or brought from England to this country by Mr. JAMES CARTER, in 1796 or 1797, for his partner, Mr. T. BREWER, who planted it in his grounds at Roxbury, under the name of the Williams' Bon Chretien, or properly, Good Christian, by which name it was then and is now known in England, where it is rated as second quality at Chiswick, as appears by the Catalogue of their gardener, Mr. THOMPSON. Here it got the name of *Bartlett* from the present owner of the Brewer estate, who, not knowing its proper name, allowed it to be called by his own. In France it is known as the Williams Pear (*Poire Guillaume*) where I think it is rated still lower than in England. Now many cultivators and fruit loving gentlemen esteem this pear above all others, and as it sells very high in the market, those who raise fruit to sell may well esteem it highly. But some gentlemen who esteem fruit in proportion as it suits their palate, are prone to consider it of inferior quality ; although it is very large, and very handsome, and very juicy. But they say it tastes like rotten fruit. Suppose it be true, that it has slightly the taste of an incipient state of decay, is it to be condemned entirely on that account ? The Medlar, which is one of the apple and pear tribe, was formerly

raised in England in considerable quantities, but was never eaten until rotted under ground. Is it not then assuming too much to put a fruit down merely because it has a rotten flavor? Who shall decide upon this question, where tastes vary as much in regard to the flavor of the fruit as it does as to the human countenance?

The best pear must depend on the use to which you mean to apply it; if for your own eating, that which suits your own palate most exactly, is the best; if for profit, that which will bring the most money in the market, is to be preferred.

In some places, fruit that is in an incipient state of decay is preferred to that which is sound, as may be seen by the following fact:

In the autumn of 1843, I was at Honfleur in France, in the neighborhood of which place, I saw several women mounted on donkeys, going, as they told me, to market with fruit. On being asked, what kind? Pears, was the answer. What kind of pears? The Messire Jean, was the reply. As this pear was a great favorite with me, when I was able to bite through its hard sides, (for it is the extreme and the perfection of the breaking pears, as the Brown Beurré is the extreme and the perfection of the soft-flesh or buttery pears.) I gave the woman a small piece of money, and asked the amount in pears. With this request she complied, by giving me a number of these fruit, which I found were all rotten. On asking her in an angry tone, why she gave me a parcel of worthless, rotten fruit, she laughed in my face, and said, "You joke, I believe," and told me I must be a green one, indeed, not to know that this pear was always rotted before it was eaten. "The pears," said she, "are in perfection, and if you are so ignorant as not to know what is good, it is no fault of mine, so good morning to you," and off she drove,

leaving me to swallow the imposition as I considered it, or the joke as she did, or the pears themselves, as I thought best.

But we have a great variety out of which a selection may be made, to gratify every taste, some of which varieties we will now enumerate.

Those pears that are considered as summer pears, are Madeleine, Harvard, Jargonelle, Green Chisel, Muscat Robert, Blanquet à longue queue, Franc Real d'été, several of the Bergamots, such as the Red and the Summer; also the Catharines, or Rousselets, or what are commonly called the Summer Caten or Catern, and the Rousseline. Many of these are esteemed and valuable fruits, when raised for the use of the cultivator and his family. If I were called upon to select six of the finest *summer* pears for a private garden in the country, I should name the Madeleine, the Harvard, the Jargonelle, Summer Franc Real, and Red Bergamot.

Among the *autumn* Pears, there are, besides those above mentioned, the Dix, a wilding of Boston, inferior to none other, if all its valuable properties be considered. In appearance, form, flesh and size, together with its fine texture and delicate flavor, it resembles the St. Germain, and is, as an *autumn* pear, what the St. Germain, when in perfection, is as a winter pear, the most valuable species with which we are acquainted.

The Brown Beurré is another pear, perfecting in October, of superior merit, but it does not last long enough to give it the value of the Dix.

The Beurré Diel [on quince stocks] is another pear of distinguished merit, if it be properly treated, and kept till it be entirely ripe, and will be more and more esteemed as it is more known.

The Marie Louise and Josephine, are

both excellent, as are the Verte Longue, the Capiaumont, the Sylvanche Vert, the Urbanist and Duchesse d'Angoulême.

But the autumn pear, under the name of Van Mons' Leon le Clerc, which has lately been brought into notice, has a great reputation in England, whence it was imported a few years since. I have had this fruit in bearing two or three years, and have found it very good, but not equal to the account given of it by Mr. LONDON in his Horticultural Journal. I prefer the Dix pear to it, although the Dix is not so large or so handsome; but it continues in eating longer, and when well ripened, has, to my taste, a better or more agreeable flavor.

Besides the above, there are several other kinds of autumn pears that deserve attention, such as the Beurré Portugal, the Figue d'Amiens, the Beurré Bronzé, the Vicar of Winkfield, Wilkinson, and others of equal value.

And, among autumn Pears, were I to select, I should name the Dix, the St. Ghislain, Gansel's Bergamot, Beurré Diel, Seckel, Marie Louise, White Doyenné (or St. Michael,) Isambert, Louise bonne de Jersey, Duchesse d'Angoulême, Van Mons' Leon le Clerc, and Urbaniste.

As regards the *winter* Pears, the Napoleon and Passe Colmar may be considered as belonging to this class, although they sometimes ripen in November, but may be kept till late in December with proper care. These are both excellent fruits.

Among the new or Belgian Pears, that ripen later in winter, those mostly esteemed are the Winter Nelis, the Glout Morceau, Beurré d'Aremberg, and Easter Beurré.

Although the St. Germain, the Virgoulouse, the Winter Colmar, and Chaumontel, are no longer cultivated in the open country near the sea-board, yet they still may be, and are raised in towns, as in Bos-

ton, in perfection, and may be in other cities, where they find that protection which the open country does not afford them in New England. Of these, the most valuable is the St. Germain, which fruit possesses more of the useful and valuable qualities which we require, than any other of the winter sorts; as it begins to ripen in January, and continues, if properly taken care of, into March and April, while it possesses the excellent texture of the buttery sorts, and is among the finest flavored of the pear tribe. [The St. Germain ripens fine crops here, and still finer in the interior of the State of New-York.—ED.]

But as I have said before, this decides nothing; for my taste may and would perhaps, be condemned by well informed gardeners. In fact, on this subject of taste in the flavor of fruits, I have long since become convinced, that no one can judge for all others, as I once had a practical evidence of its extraordinary deviation from what I had thought an established rule.

Being in Boston market in the autumn, I was, with several other persons, looking over some baskets of peaches and pears at one of the fruit and vegetable stalls. Presently a sailor entered, and the fruiterer offered him a choice of his fine fruit, by calling his attention to his fine water melons and musk melons, and apples and pears, peaches and plums, of which he had an abundant supply. But Jack turned up his nose at all these, and fixing his eye upon a green cucumber, he exclaimed, "None of these for me, a cucumber for my money!" and applying the action to the word, he seized upon one of them, and clapping the bitter end into his mouth, he ate away upon it till the tears ran out of his eyes, and he was almost suffocated by the hasty and greedy manner that he swallowed it. The bystanders looked at him with astonishment, ex-

pecting to see him choke ; at length, however, he cleared his throat sufficiently to give utterance to his words, when looking at a man who stood before him, watching

his delighted and distorted countenance, he exclaimed, "If you will believe me, sir, it is the first I have tasted this year!"*

S. G. P.

IS FERTILIZATION NECESSARY ?

BY SENEX, NEW-YORK.

A. J. DOWNING, ESQ.—*Dear Sir* : I perceive in the controversy respecting the strawberry, it is considered by both parties, that perfect stamens and pistils are necessary to the production of fruit. If by the fruit, however, we understand simply the fleshy receptacle in which the seed, (which is really the fruit) is imbedded, I cannot conceive what the development of the sexual organs of the plant has to do with its formation.

The size of all fleshy fruits depends upon a monstrous development of the receptacle, as in the strawberry, or a similar development of the cellular tissue, by which the seeds are surrounded, as in the apple ; and there is no doubt that this development causes the sexual organs of the plant to become sterile. In many vegetables, also, the monstrous development of the tissue of the stem, root or leaves, can only be obtained by preventing them bearing seed ; and every horticulturist will perceive, upon a moment's reflection, that very many of his highly prized productions are obtained, directly or indirectly, in this way.

I have no doubt you have eaten many excellent fruits in which you may have observed that there were no seeds, and yet the fruit was fully developed : for instance, the Pine Apple, the Banana, the Bread-fruit, the Pear, Apple, Cherry, Plum, Peach and Barberry ; indeed nearly all our cultivated fruits produce seeds but very sparingly, and very often not at all. From the above

you will see that good and perfect fruit can be obtained without impregnation, and similar instances are to be found in the animal kingdom ; thus hens lay eggs without impregnation, which are equally as large and good for domestic purposes as those which are impregnated ; and also capons, and indeed all our domestic animals, become larger when castrated, as there is then a greater development of their cellular tissue, etc.

I think, if cultivators will reflect on the above hints, they will find that their failures in obtaining good crops are owing to some other causes than the absence of stamens and pistils, and are to be found in the unsuitableness of the soil, manures, climate, or the like. As to their being diœcious, that is sheer nonsense ; there is not a diœcious plant in the order Rosaceæ, to which the Strawberry belongs. The genus *Clifortia*, which is diœcious, was once placed in the order, in the tribe *Sanguisorbea* ; but this tribe is now, I believe, made a separate order. Writers should be careful to use words in their strict sense ; and if the word diœcious were thus used, it would mean that Hovey's Seedling strawberry bore flowers

* We should rather incline to call this an instance of the sailor's coarse *appetite*, than his *taste*. Indeed, no word is so much misapplied as the latter. We consider a *taste*, by which we mean a *nice sense of discrimination*, as the result of good natural organization, joined to a familiar acquaintance with a great variety of the different objects on which the taste is to be exercised. Thus no man could be said to have a fine taste in pictures, who had never seen any thing better than the daubs of a village sign painter. To go lower, we believe M. SOYER would not give a person credit for any taste in cookery, who had never eaten anything except "plain boiled and roasted ;" and we should certainly deny any one the right to claim a taste in fruits who does not know by heart, at least all the finest standard varieties.—Ed.

which on one plant were furnished with female organs, and on another plant with male organs; so that even were that doctrine true, there would be no need of introducing other varieties in order to make them fruitful, and also that there were two Hovey's Seedlings raised, one female, and one male, an evident absurdity; so that the question resolves itself into this, that the plant, having lost its sexual organs through excessive cultivation, a different mode is likely to restore them; but as I have already stated, I cannot conceive that they are necessary to what, in horticultural parlance, is called the fruit.

SENEX.

New-York, Aug. 25, 1847.

REMARKS.—That there are instances of fruit being borne without the aid of the stamens, is undoubtedly true; but for the most part these are exceptions to the general law. Even in the case of seedless apples and other fruits, it is necessary that the pistils be fertilized by the pollen, in order that the fleshy receptacle which we call the fruit, should swell and arrive at maturity.

In the case of the strawberry, there have been so many experiments made lately, that we are no longer in the dark as to the facts regarding it. It has been carefully proved, that certain sorts, called, from their deficiency in stamens, *pistillate*, as the Hudson, for example, will not, if planted entirely separate from all contact with other

varieties, called staminate, from their having the stamens fully developed, set one berry to a dozen blossoms; while the same *pistillate* sorts, if planted along side of *staminate* ones, set nearly every blossom, and bear large crops of fruit. This has been tried repeatedly, till it is impossible to doubt its truth.

On the other hand, it is perfectly true, as SENEX states, that the strawberry is not a diœcious plant; and that this so called staminate and pistillate form, is only an anomalous state of the plant, originated or afterwards produced in certain varieties by cultivation. Thus, in some soils, certain sorts called *staminate*, such as Keen's Seedling, Ross' Phoenix, etc., bear most abundant crops, because they have the normal proportions of pistils, while in others they are almost barren, because the pistils are not well developed, and the flower does not set any fruit. Such sorts, therefore, vary, and cannot fully be depended on. As it is now ascertained, the most *certain* mode of growing large crops, is to plant large beds of pistillates alternate with small beds of staminates, in order that the latter may always fertilise the former, since the staminates, though they frequently vary, and fail to produce pistils, yet always produce stamens. Most persons are now adopting this as the shortest and surest mode of producing large and constant crops in this climate. ED.

REMARKS ON TWENTY-FIVE PEARS.

BY J. L., PHILADELPHIA.

As there is a good deal of diversity in the opinions respecting many new fruits, in various parts of the country, owing to differences of soil and climate, we take the liberty of printing the following extract from a letter received from a gentleman in Penn-

sylvania, whose opinion is of value, and who has paid a good deal of attention to the culture of fruits. His soil, we may premise, is a good sandy loam.—ED.

—As I know you wish to collect information about the success or failure of dif-

ferent new fruits, in various parts of the country, I add a few hasty notes of my experience with twenty-five sorts of pears in my collection. The trees were planted in 1837, and have been in bearing several years.

BEURRE BOSC. This capital fruit cannot be overpraised. As it always bears with moderation, the fruit is always of good size, the appearance handsome, the quality most excellent. As a September pear, I prefer it to all others received from Europe within the last twenty years.

BEURRE ROMAIN. A pretty good pear, and an excellent bearer. The fruit is always fine, but its flavor not quite first rate.

CABOT. Bears immense crops, and is a handsome Brown Beurré-like pear. But it rots so quickly at the core after it approaches maturity, that it is of little value.

BON CHRETIEN FONDANTE. A most variable fruit—sometimes juicy, melting and delicious, at others worthless. Cannot be depended on with me.

DEARBORN'S SEEDLING. Perhaps the finest of all early pears. Flavor excellent; without a single faulty specimen on a tree; and the tree itself an exceeding and most regular bearer. It appears to me this variety is not generally estimated as it deserves. In my experience, it proves the finest of all early pears.

GOLDEN BEURRE OF BILBOA. This remarkably fine fruit ripens here at the last of August. I think it worthy of all commendation. It is so uniformly handsome, of a beautiful pale gold colour, and the skin always marked with a russety patch or *escutcheon*, round the stalk. It bears well with me, both on pear and quince stocks, and the flavor is delicious. It is seldom

seen in this neighborhood; but it deserves to be a general favorite. [We concur in this opinion, and annex an outline of this excellent fruit.—ED.]

PRINCESS OF ORANGE. Sometimes excellent, but not to be depended on, except on pear stocks, and not of first-rate flavor then.

WASHINGTON. A good and handsome native pear, and when well cultivated, very beautiful.

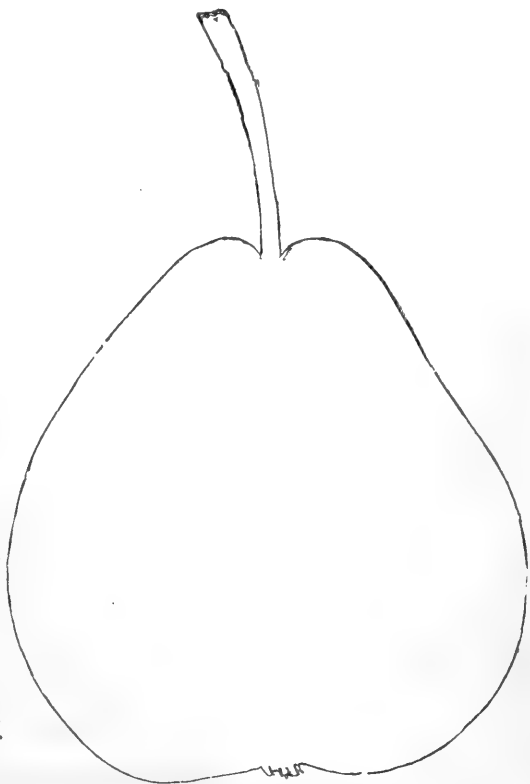


Fig. 29. Golden Beurre of Bilboa.

BEURRE DIEI. Always large and productive, but the flavor can only be depended on when it is grafted on quince bottom. On pears, especially if the tree is young, it is frequently pithy and tasteless. The same remarks will apply to the *Duchess of Angoulême*.

COMPRETTE. Not a large fruit, nor a very

abundant bearer, but the flavor always sugary and good.

HEATHCOT. I have noticed your remarks on the good qualities of this fruit, in the last volume of the *Horticulturist*. It deserves all you say. The tree is thrifty and free from blight. The fruit is among the best of the autumn pears.

FONDANTE D'AUTOMNE. It is a pity that this delicious pear is not higher coloured, or more attractive in appearance. It is the only pear that I know, which rivals the Seckel in honied aromatic flavor.

CHELMSFORD. A large, coarse fruit, yellow, with a red cheek, only fit for cooking.

ST. GHISLAIN. This excellent fruit is a little too variable—some seasons delicious, others pithy.

GRAY DOYENNE. Among the very best pears in the world! Always good, rather later, and always fairer than the White Doyenné or Butter pear.

CAPIAUMONT. As prolific as a Boston Russet apple, and therefore profitable for the orchardist; but too apt to be astringent to suit the palate of a good judge of fruit.

LOUISE BONNE DE JERSEY. Always bears large crops of handsome, juicy, refreshing pears. This pear, for September, may be likened to the Bartlett for August; i. e. it always gives satisfaction by its productiveness and good quality.

ASTON TOWN. A poor fruit; it may please an English palate, but its small size and indifferent flavor are not relished here.

BELLE ET BONNE. Large, but of a poor flavor, and on the whole not worthy of cultivation.

MARIE LOUISE. Very fine, as almost every pear grower knows. The tree, however, wants a rich deep soil.

HERICART. Flavor very poor; a sort quite unworthy of general cultivation.

PETRE. This is a very favorite fruit of mine. It has much of the delicious qualities of that old favorite, the Butter pear (Doyenné.)

VAN MONS' LEON LE CLERC. This variety has now borne two years a very few specimens only. The fruit is large, fair and handsome, and the flavor very good. It will, from the vigor of the tree, and its fine size, undoubtedly be a popular fruit.

STEVENS' GENESEE. A very excellent American pear, with all the productiveness and vigor of our native sorts. The fruit grows large, and I consider it a standard sort.

URBANISTE. A delicious fruit. Persons who have small gardens, ought, however, to grow it on quince bottoms, as on pear stocks, it takes eight or ten years before it becomes productive. Your friend.

J. L.

POMOLOGICAL REFORM.

OUR readers do not require to be told that the all-engrossing subject, which, at the present moment, occupies the minds of horticulturists generally, in the United States, is the cultivation of the finest hardy *fruits*. The orchardist, within convenient distance of markets, considers it the best investment of capital applied to land; and the amateur

finds in the collection and cultivation of all the choicest sorts, both an agreeable and interesting occupation, and a means of conferring a real benefit on the district of country in which he resides; while the more humble private grower, with limited space, finds in the produce of his half dozen select trees, almost as much to delight and inte-

rest him, as the celebrated Reyboldts of Delaware find in their thousand acre peach orchard.

With this great and increasing attention to the cultivation of fruit, comes also the continual production of *new varieties*. Many of these spring up accidentally from seed; others are the product of seeds gathered from choice varieties, and planted with a view to improved sorts; and a few are the result of hybridising, pursued by the more scientific gardeners and experimentalists.

Of course a large proportion of these new seedlings are either of too indifferent quality to be worth notice, or they are second-rate; or they are inferior, or only equal to many sorts already in cultivation.

With the well known partiality of parents for their own offspring, it is common enough to see the originators of these second or third-rate seedlings pressing them upon public attention as fruits of the finest quality—unsurpassed and unsurpassable; and having, as they conceive, an undoubted right to pass final judgment on their merits, they confidently ask the public to buy and plant these new sorts, which, when fairly proved, often turn out of little or no value, or decidedly inferior to those already in cultivation.*

Confident as we are, that the United States will produce many, as it has already produced a few, new varieties of fruit equal to any in the world, and superior to any for our soil and climate, it is becoming highly necessary that some system should be adopted which will protect the public against a flood of new varieties of little or no value.

Such a safeguard can only be found, by taking the judgment of a new variety, the describing and recommending of the same,

out of the hands of all but *pomologists* of acknowledged acquaintance with all the standard sorts, or the fruit committees of horticultural societies *well qualified* for the purpose.

Whatever may be the natural fondness of a cultivator for good fruit, observation will soon convince any one acquainted with the matter, that no person is competent to judge of the relative qualities of a new variety, but one who is already conversant with all those leading sorts of acknowledged character which exist in the best collections in the country. Ignorant of these, the novice often rates a fruit as of first rate quality, which a moment's examination, by an experienced judge of fruits, determines to be of second quality, and inferior to a large number already known. A natural pride prompts the novice, who believes he has produced something of value to the public, to give it his name, and distribute it extensively among horticulturists and propagators of fruit. Hence we see catalogues needlessly swelled with the names of dozens of new fruits, not one third of which upon trial ever prove at all worthy of cultivation.

The only remedy lies in restricting the right to describe, name, and publish, a new fruit, to competent pomologists, in the same way that the right to describe and name a newly discovered plant is confined to botanists only, insects to entomologists, birds to ornithologists, etc., etc.*

By adopting this course, and establishing some standard by which a new fruit must be measured, with fixed rules governing the nomenclature, and description of fruits, pomologists and fruit committees will have something definite to guide them; the public will have some guarantee for the value

* We have almost daily proofs of this; and while we write, we have just received a sample of fruits of a "new seedling pear," highly praised, but which, on examination, proves to be a well known old sort that we have known for twenty years, and which no person who had ever seen it once, could afterwards mistake!

* Of course the *originator* of a new variety which proves of real merit, should retain his right to suggest the *name* for the variety, which the pomologist describing it, if it were a proper and significant one, would be bound to adopt.

of new sorts brought into notice; and pomology will soon assume the character of a science.

Along with this new order of things for the *future*, something must also be done to prevent continual perplexity and confusion with regard to the *past*. That all pomological works of the last thirty years have not been written with the accuracy that has characterised other branches of natural history, is greatly to be deplored. To attempt, however, to remodel every thing that has been done, to alter names extensively, and to reconstruct the old with the same method as we may do the new, would be a vain and hopeless task. It would only make confusion worse confounded.

The best that can be done with the pomology of the past, is to select the latest and most authentic work on either side of the Atlantic, and establish these as the *standard* for the names of all fruits already known and described. By doing this, we shall at least secure uniformity, and something like stability in the names of the old varieties.

The *London Horticultural Society's Catalogue* will, we think, by general consent, be chosen as the *standard European authority*. The great and extraordinary facilities enjoyed in that garden, and unceasing devotion there to the subject, for many years past, have given this work, though it is not without defects, a higher character, in many respects, than any other of foreign origin.

In all matters relating to American fruits, some American work, of well established reputation, must also be taken as the standard.

With the past thus to be settled by reference to recognized authorities, as standards, and all action in the future controlled by judicious established rules, we may hope that this most interesting branch of horti-

culture, of so much general importance to the country, will be relieved of the embarrassments that have so long surrounded it.

Impressed, as we are, with the importance of this subject, we have addressed a circular to several of our leading horticultural societies, in various parts of the country, asking their attention to it, and suggesting such rules as we believe, would, in a great degree, cover the ground. We learn already, that the matter will be likely speedily to receive favorable attention, and we hope to publish such *Pomological Rules* as shall be adopted, in the next number of the *Horticulturist*.

This subject is attracting the attention of many intelligent horticulturists in various parts of the country. The following remarks on the new seedling Ohio strawberries, by Mr. BEECHER, are from the *Western Farmer and Gardener*:

"We are about to have an immense increase of seedlings. The process of origination is not difficult. Many amateurs are already sending forth dozens of kinds. Are these experiments conducted with any special aim? What are the faults of the old kinds? Are the new sorts bred with reference to certain desiderata? The mere fact that a kind is new, and large, and good, does not entitle it to a name, and a price of five dollars a dozen plants. There is no special merit in raising very good sorts. *No strawberry ought to go forth, unless in some respect it is decidedly better than established kinds.*

Our attention has been more especially directed to this matter, by the recent report of the Cincinnati Horticultural Society, upon seven seedlings of Mr. Burr's, Columbus, Ohio. We should have been glad to have had the report more explicit upon two points, and if any of the gentlemen on the committee will yet give us the information, we shall feel obliged to him.

First. Do the committee state *on their own knowledge*, the *habits* of the kinds mentioned? Or, is it stated upon the testimony of Mr. Burr, that one "bears well;"

another, "a full bearer;" "a profuse bearer." Without doubt, Mr. Burr's statement would satisfy any man, that any one of his seedlings was a profuse bearer—*so far as his experience had gone*. But if they have been cultivated as yet in but one place, if only under Mr. Burr's management, then it ought to appear, in any report, *to what extent they have been proved*. As it is, the greatest number of readers will understand Messrs. Longworth, Ernst, Hoffner, etc., as stating on their own personal knowledge, and after a proper trial, that these plants have, *as a general character*, the habit of "profuse" bearing, "abundant" bearing, "good" bearing, etc.

The second matter on which we lack information, is the comparative merits of these candidates. Are they all better than any now cultivated? Is each better in some one respect? Are they more hardy, more prolific, larger in fruit, higher flavored or colored? Is there good reason, aside from their *newness*, why they should supplant old sorts in our gardens, or share "bed and board" with them?

It is not enough that a society should report simply with their eye upon a lot of fruit. As the report is meant for the community, it ought to be carefully considered what effect a given report will probably have upon the community. Did the Cincinnati Horti-

cultural Society design to say to cultivators—"These seven seedlings of Mr. Burr's have been thoroughly tested, and are found worthy of general cultivation;" or did they only mean to say—"In so far as we have been able to judge from the mere inspection of the *fruit*, we are pleased with Mr. Burr's seven seedlings, and recommend that they be further tried, until their full habit and worth be ascertained."

It is our impression, that the latter report was all that was warranted by the facts; but the first one is certainly the one which, in effect, has been made.

We do not make these remarks to prejudice Mr. Burr; or because we think his seedlings less than excellent. The fact is, that we know very little about them. We are told that they are excellent: so is the Hudson, Early Virginia, Hovey, etc., etc. Are these *as good*? Are they better? Do they supply any deficiency in old sorts? Do they bear later, or earlier, or better, or larger fruit, or in *what respect* do they claim admission among standard strawberries?

The difficulty of raising apples and pears, will put some kind of limit to their increase. But if the fever once rises for originating small fruits, whose term of maturity is short—a year or two—we shall be deluged with novelties, unless there be distinct *terms of admission*.

THE IDA GREEN GAGE.

THE upper half of the Hudson river has, very deservedly, a high reputation for its plums. The heavy soil is peculiarly adapted to the growth and productiveness of this fruit, and there is scarcely a season when the fruit gardens and orchards, about Hudson, Albany, Troy, (and we may include Schenectady,) do not offer a fine display of this excellent fruit.

The plum at the head of this article has considerable local reputation, as being a fine seedling fruit. Knowing our desire to examine specimens, Mr. REAGLES, of Schenectady, a nurseryman, who ranks it ve

high, and has already propagated it to some extent, has very obligingly sent us specimens obtained from the original tree on Mount Ida, near Troy, N. Y., accompanied by the following note:

"Schenectady, N. Y., Sept. 7.

"DEAR SIR—I send you, by express, specimens of the new seedling plum, called the *Ida Gage*, taken from the original tree now growing on Mount Ida, (Troy.) I am not aware yet to whom it owes its origin, but will endeavor to ascertain and inform you.*

* We presume this tree is a seedling of Mr. HEARTT's, in whose excellent fruit garden, on Mount Ida, we saw a number of seedlings resembling the green gage, some few years ago.—E.D.

"Regarding the qualities of the green gage, I have but to say, that it is equal to the green gage in flavor, superior to it in size and beauty, resembling a handsome red-cheeked nectarine, to recommend it to fruit-growers as worthy of a place in the smallest garden. I do not think I exaggerate its merits, taking every thing into consideration, when I say there is no plum extant superior to it. It is exquisitely beautiful, exceedingly luscious in flavor, productive, and hardy. You will, however, be best able to judge of its merits, and describe it, as I send you ripe specimens. Respectfully yours,

"C. REAGLES, JR.

"A. J. DOWNING, ESQ."

We are not willing to give any fruit so high a rank as our correspondent does the present one, without seeing it several seasons. We will, however, say that this is a most excellent seedling of the green gage, very strongly resembling it in flavor, and general appearance; with the distinctive characteristics of larger size, a longer stalk, and a purplish red cheek, instead of the few streaks or dots of purple on the sunny side of the Green Gage.

It appears to be a distinct sub-variety of the Green Gage, and if, as we are inclined to think likely from all we hear of it, it turns out to be uniformly larger and more productive, it will certainly take a high rank among plums.

As it is unquestionably the finest seedling fruit among a considerable number that we

have examined this year, we shall describe it, and let another season's experience settle its exact merits. In the mean time, we think there can be little doubt, that it will prove a decided acquisition.

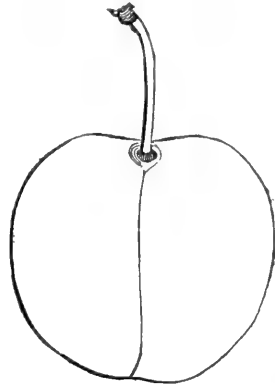


Fig. 30. *The Ida Green Gage.*

IDA GREEN GAGE.* Fruit roundish, strongly resembling the Green Gage in general appearance, but one-third larger. Suture very faintly marked half round. Skin of the colour of the Green Gage, but the sunny side washed with purplish red. Stalk nearly an inch long, rather slender, inserted in a very slight depression. Flesh greenish amber, very melting and juicy, separating freely from the stone, and of the sprightly luscious flavor of the old Green Gage. Stone small. It ripens about the same time with the Green Gage, or a few days later. Branches smooth, and the growth of the tree much like that of the Green Gage.

LIQUID MANURE.—The papers occasionally contain accounts of interesting and successful experiments with liquid manure. It is indeed very valuable; but we believe, says Mr. J. J. THOMAS, that a large share of the advantages result from the simple watering which the plants thus obtain. The manure itself should not, by any means, have all the

credit, as we very well know from experience, that a single irrigation of garden plants has increased their growth to an extent hardly to be expected from the most copious manuring.

* We propose to call this "Ida Green Gage," instead of simply "Ida Gage," to show its character; and that it is a sub-variety, and not in all respects an entirely distinct sort.

POPULAR ERRORS ABOUT THE "RISE AND FALL" OF SAP.

BY PROF. LINDLEY, UNIVERSITY OF LONDON.

WHAT a curious hallucination is that which supposes the *sap of trees to fall*, or settle, in the winter into the roots! One would have thought that the notorious difficulty of cramming a quart of water into a pint measure, might have suggested the improbability of such a phenomenon. For it certainly does require a very large amount of credulity to believe that the fluids of the trunk and head of a tree, can by any natural force of compression, be compelled to enter so narrow a lodging as the root. The idea, however, has established itself in some persons' minds, and, we presume, in connection with that other old vulgar error, that the sap is in rapid motion in the spring time, in the roots of a tree, before it begins to flow in the branches. These whimsies took their origin in days when the world was contented to accept assertions upon trust, and when hypotheses and vain imaginings formed the debased paper currency of science. But now men have found out the value of a golden standard, both for money and for knowledge; they call for facts before theories; and the result, already, is a wonderful disturbance in the crowded ranks of scientific as well as historical legends.

We shall assume the word *sap* to signify the fluids, of whatever nature, which are contained in the interior of a tree. In the spring, the sap runs out of the trunk when it is wounded; in the summer, autumn, and winter, it does not, unless exceptionally, make its appearance. But in truth the sap is always in motion, at all seasons, and under all circumstances except in the presence of intense cold. The difference is, that there is a great deal of it in the spring, and much less at other seasons.

When a tree falls to rest at the approach of winter, its leaves have carried off so much more fluid than the roots have been able to supply, that the whole of the interior is in a state of comparative dryness; and a large portion of that sap which once was fluid, has become solid, in consequence of the various chemical changes it has undergone. Between simple evaporation on the one hand, and chemical solidification on the other, the sap is, in the autumn, so much diminished in quantity as to be no longer discoverable by mere incisions. The power that a plant may possess of resisting cold, is in proportion to the completeness of this drying process.

When the leaves have fallen off, the tree is no longer subject to much loss of fluid by perspiration, nor to extensive chemical changes by assimilation, for the leaves are the principal organs of perspiration and assimilation. But the absorbing power of the roots is not arrested; they, on the contrary, go on sucking fluid from the soil, and driving it upwards into the system. The effect of this is, that after some months of such an action, that loss of fluid which the tree had sustained in autumn by its leaves, is made good, and the whole plant is distended with watery particles. This is a most wise provision, in order to insure abundant food to the new-born leaves and branches, when warmth and light stimulate them into growth.

During all the winter period, the sap appears indeed to be at rest, for the re-filling process is a very gradual one. But M. BIOR, many years ago, proved, by an ingenious apparatus, that the rate of motion of the sap may be measured at all seasons; and

he ascertained it to be in a state of considerable activity in mid-winter. Among other things he found that frost had considerable influence upon the direction in which the sap moves. In mild weather, the sap was constantly rising; but when frost was experienced, the sap flowed back again—a phenomenon which he referred to the contracting power of cold on the vessels of the trunk and branches, the effect of which was to force the sap downwards into the roots lying in a warmer medium; then, again, when the frost reached the roots themselves, and began acting on them, the sap was forced back into the trunk; but as soon as a thaw came on, and the ground recovered its heat, the roots, out of which a part of the sap had been forced upwards, were again filled by the fluids above them, and the sap was forced to fall. A large Poplar tree, in the latter state, having been cut across at the ground line, the surface of the stump was found to be dry, but the end of the trunk itself dripped with sap. Sap, then, is always in motion; and if it ever settles to the root in a visible manner, that is owing to temporary causes, the removal of which causes its instant re-ascent.

As to the idea that the bleeding of a tree begins first at the root, and, in connection with this supposition, that what is called the rise of the sap is the cause of the expansion of buds, and leaves, and branches, nothing can well be more destitute of any real foundation. If in the spring, when the buds are just swelling, a tree is cut across at the ground line, no bleeding will take place, neither will the sap flow for some distance upwards; but among the branches the bleeding will be found to have com-

menced. Let A B represent the trunk and branches of a tree; let incisions be made at *c*, *d*, *e*, *f*; the sap will run at *c* first, then at *d*, next at *e*, and last at *f*, next the roots. This was observed some years ago by Mr. THOMPSON, at that time the DUKE OF PORTLAND's gardener, who tho't he had discovered that the sap of trees descends in the spring, instead of ascending; a strange speculation enough it must be confessed. The fact is, that the sap is driven into accelerated motion, first at the extremities of a tree, because it is there that light and warmth first tell upon the excitable buds. The

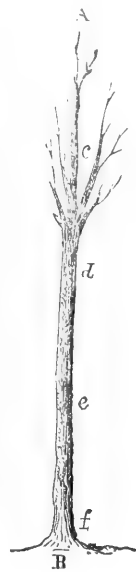


Fig. 31.

moment the buds are excited, they begin to suck sap from the parts with which they are in contact; to supply the waste so produced the adjacent sap pushes upwards; as the expansion of the leaves proceeds, the demands upon the sap near them become greater; a quicker motion still is necessary on the part of the sap to make good the loss; and thus from above downward is that perceptible flow of the fluids of trees, which we call bleeding, effected.

The well known fact of trees sprouting in the spring, although felled in the autumn, proves that the sap had not at that time quitted the trunk to take refuge in the roots. Such a common occurrence should put people on their guard against falling into the vulgar errors on this subject.

PEARS ON QUINCE AND MOUNTAIN ASH STOCKS.

BY JOHN M. IVES, SALEM, MASS.

HAVING grown several varieties of Pears for ten years past upon Quince root, and more recently upon the Mountain Ash and the English White Thorn, I have thought my experience might be of some benefit to those who are cultivating this fruit, in this section particularly; and as your excellent periodical is circulated largely among us, I have ventured to forward the following desultory remarks.

Your English correspondent, Mr. RIVERS, says of that fine pear, the *Beurré Bosc*,—"it is exceedingly *refractory*," and that he is "not sure that it will live and flourish for any lengthened period, although double-worked on very thrifty stocks."

I have grown this Pear upon the Quince root for many years, and find it to grow luxuriantly, but it is *shy in its bearing*; but on the contrary when *double-worked*, as I now have it, upon the *Martin Sec* pear to bear equally with the Bartlett. I have counted thirteen fine large specimens upon a single shoot of thirty-six inches long. The *Bloodgood double-worked* does not answer, it being a poor grower, the fruit small, but colored upon one side. This variety, when grown upon its own stock, is decidedly the best early pear in my collection, and I cannot divine why it is not more highly prized by the cultivators around Boston. I have understood that the specimens exhibited at the Rooms of the Horticultural Society, have been below what you would denominate medium; this will probably account for the dissent your correspondent, Mr. NEWHALL, of Dorchester, made to your Pomological Gossip, in calling it first-rate or quality. A cultivator from Plymouth, on his return from Boston, was surprised to find

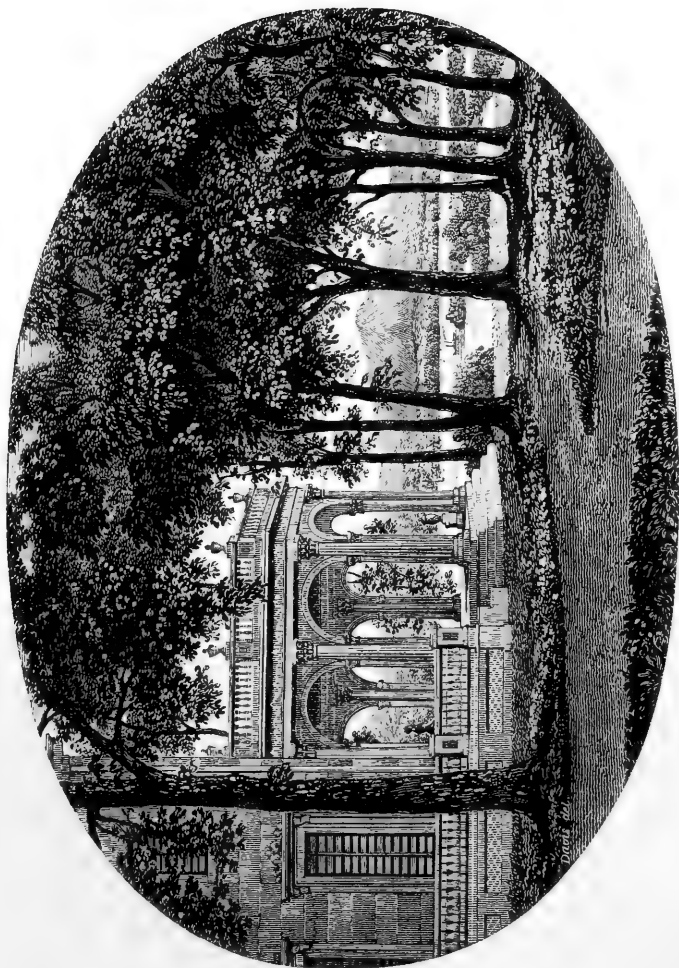
the specimens of the *Bloodgood* upon my trees so much larger than those he had just seen at the Horticultural Rooms. The fruit this year averaged smaller than those of the two previous seasons.

I have the *Fondante d' Automne* (Belle Lucrative) grown upon the Mountain Ash, budded three years since, near the ground, which is very dwarfish, having as fine specimens in a cluster, of this truly delicious pear, as any upon my standard trees. The *Bloodgood*, *Seckel*, *Bartlett*, and *Bezi de la Motte*, worked upon the Mountain Ash, do not as yet promise much, the first named sort being the only one that has made any growth this season. The *Seckel*, which I have tried in various ways, upon the Apple, as recommended by our friend, Mr. ERNST, of Cincinnati, is a failure;* the grafts promised well for the first season, and then either died out, or came to a *dead stand*; I have, to be sure, a few small button-looking pears upon a sickly graft, which was placed upon a most thrifty stock of the *Sop-savine* or Sops-of-Wine Apple. I budded several varieties of the pear upon the English White Thorn; many of these have a fine two years growth—among them the *Bosc* and *Flemish Beauty*—the former of which you know has not the reputation of being a good grower upon the Pear or Quince root.

Among the varieties of Pears fruited this season, I find the *Long Green of Coxe*, *Golden Beurre of Bilbao*, *Fondante d' Automne*, *Andrews*, *Louise bonne de Jersey*, *Washington*, *Bezi d' Montigny*, *Buerre d' Amaulis*, *Winter Nelis*, *Lewis*, *Buffum*, *Flemish Beauty*, *Cushing*, *Heathcote*, and *Bon Chretien*

* This is the result of a number of experiments in various parts of the country.—ED.





MONTGOMERY PLACE.

[Monticellist, October, 1847.]

Fondante, entirely free from blight or cracking; while the Buerré Diel, Dix, Bosc, and the old Pound Pear, have, in my garden, more or less blasted.

The Bosc is, however, perfectly fair when *double-worked* as named above. There is one pear which I think has been much underrated; I refer to the Buffum, a native fruit of Rhode Island. This is one of the most profitable market pears we possess; *it is a great grower and prodigious bearer*; the fruit medium size, and when ripened in the house handsomely colored; and although we

should not consider it as first-rate in *quality*, it is yet a pleasant fruit, and highly prized by many here, as well as in its native State.

Yours very truly, JOHN M. IVES.

Salem, Mass., Sept. 13, 1847.

P. S. Most Pears average larger upon the Quince than upon the Pear stock—the Bloodgood seems to be an exception, and from its growing larger in my soil, which is a light sandy loam, made retentive by the application of leached ashes and clay, than in the strong soil around Boston, it undoubtedly requires a warm and light one.

REVIEWS.

THE AMERICAN JOURNAL OF SCIENCE AND ARTS: conducted by Professors B. SILLIMAN, and B. SILLIMAN, JR. and JAMES H. DANA. Second Series, No. 11, September, 1847: New-Haven.

SILLIMAN'S JOURNAL is one of the few periodicals of which an American may be proud. Established so long ago as 1818, it has ever since so steadily held its place, and shed the light of science over our hemisphere, that among the countless meteor lights of periodical literature which have flashed up and expired within the last quarter of a century, it appears like a fixed star.

The elder SILLIMAN alone established this most useful Journal, and gave it the high character, both at home and abroad, which it still enjoys. The new series before us, in its editorship, combines with the advantage of his matured knowledge and experience, that of the genius and energy of his son, and the well known abilities of Mr. DANA.

Among its contributors, are all those in any way remarkable among the scientific writers of the country. Its plan embraces the whole circle of the Physical Sciences, and their application to the arts, and while it is therefore indispensable to the *savan*, the student of nature, the engineer, or the

mechanician, its pages also offer much that is exceedingly interesting to the general reader.

Our object in taking up this serial at the present moment, is to notice a very interesting address before the last meeting of the *British Association for the advancement of Science*, held at Oxford, which it contains.

This is the inaugural address, delivered by the new President, Sir R. H. INGLIS, at the commencement of the session. As it embraces a survey of the progress of science generally during the past year, every part of it is highly interesting, and we would gladly transfer it to our columns, but its length forbids us from so doing.

We shall, however, select some of the most interesting passages. First among these, for the eyes of our readers, are the following remarks on the progress of *Botanical Science*, and the reference to the recent discoveries regarding the phenomena of *fecundation in plants*, is worthy of particular attention.

I proceed now to notice the science of Botany; which, aided in these days by the microscope, and by chemistry, as to the structure, functions and uses of the living plant, and as to the analogies in

the vegetable world in its fossil state, presents one of the most interesting subjects of inquiry to the student and to the general observer.

Systematic botany is constantly receiving additions to the number of species.

In England, with respect to living plants, for the greater part of the accession to the plants in cultivation during the preceding year, we are indebted to Mr. Fortune, the Horticultural Society's collector in China, who has recently published an account of his mission; and we are not less indebted to those who, as collectors and correspondents in various parts of the world, communicate the results of their labors to the Royal Botanic Gardens at Kew. That establishment, under the direction of my friend, Sir William Jackson Hooker, has unquestionably become the first botanic garden in Europe. I use this expression on the authority of another friend whom I have had the privilege of knowing for forty years, whom Humboldt described as *le premier Botaniste de l'Europe*, accurate, sagacious, and profound, and whose knowledge is only equalled by his modesty. After this, it is not for your sakes but my own, that I name Robert Brown; may I add, in passing, the expression of every one's wish that he would deposit more of his knowledge in print.

Before I quit the subject of the great institution at Kew, I ought to mention as one of the latest accessions to it, a cactus weighing a ton, as stated by Sir W. J. Hooker, in his report laid before Parliament; who adds, that the collection of that most singular family, so recently made familiar to us, (he refers to the collection at Kew,) "is now unrivalled in Europe."

With respect to new species of plants received only in the state of specimens for the herbarium, they have been in part obtained from China, South America and New Zealand; but chiefly from Australia. The late expedition into the interior, or at least further into the interior of that great continent than in any other direction had hitherto been made—expeditions so creditable to the enterprise, perseverance, and intelligence of their conductors; have, however, been but little productive, so far as we at present know, in the department of botany. The animal productions of New Holland, so wonderful in their forms and structures, have long formed the most remarkable characteristic of its vast region; nor is its botany without distinctions of much interest, though as yet but very imperfectly explored. It may be said, however, in reference to the results of these later expeditions, which have penetrated further inland, that they have not brought to our knowledge any peculiarities in the vegetable kingdom so various and so striking as those which exist near the coasts, and which are sufficient to distinguish New Holland and the Australian colonies from the other regions of the world.

In the diffusion of the riches of the vegetable world, steam navigation has obviously been a most favorable auxiliary; so that, "even cuttings of plants" are now "actually sent successfully to Calcutta, Ceylon, &c." In speaking of the exports from Kew, it is not unfitting to add, that "between four and five thousand plants of the famous Tussac

grass have been dispersed from the Royal Gardens at Kew during the past year."

The increase in the number of visitors to that most flourishing establishment is some evidence at least of an increase of a taste for the development of science, and probably of that increase of the love of science, which it is one of the objects of the British Association to encourage in all classes.

In 1841, the number of visitors was 9,174; but they are nearly doubling every year. In 1844, they were 15,114; in 1845, 28,139; in 1846, 46,573.

In vegetable physiology, microscopic observers have of late been much occupied in investigating the phenomena of fecundation, and especially as to the mode of action of the pollen.

On this subject botanists are still divided. Several experienced observers adopt the theory lately advanced and ingeniously supported by Prof. Schleiden, of Berlin; while others of great eminence deny the correctness on which this theory is founded. Among these, the celebrated microscopic observer, Prof. Amici, of Florence, very recently in an essay—communicated to the scientific meeting held in 1846 at Genoa—has endeavored by a minute examination of several species of Orchis, to prove the existence of the essential part of the embryo anterior to the application of the pollen, which, according to him, acts as the specific stimulus to its development.

This view receives great support from some singular exceptions to the general law of fecundation.

Of these, the most striking occurs in a New Holland shrub, which has been cultivated several years in the Botanic Garden at Kew; and which, though producing female flowers only, has constantly ripened seeds from which plants have been raised perfectly resembling the parent:—while yet there is no suspicion either of the presence of male flowers in the same plant, or of minute stamens in the female flower itself, nor of fecundation by any related plant cultivated along with it.

This plant has been figured and described in a recent volume of the Linnean Society's 'Transactions,' under the name of *Calebogyne illicifolia*, by Mr. J. Smith, the intelligent curator of the Kew Garden, by whom, indeed, this remarkable fact was first noticed. It is not the least curious part of the history of the *Calebogyne*, that male flowers have lately been discovered in New Holland, unquestionably of the same species.

Prof. Gasparini, of Naples, has more recently communicated to the scientific meeting held in that city in 1845, his observations and experiments on the cultivated fig, which, though entirely destitute of male flowers, produced seeds having a perfectly developed embryo, independent of fecundation; access to the pollen of the wild fig, generally supposed to be carried by insects, being, in his experiments, prevented by the early and complete shutting up of the only channel in the fig by which it could be introduced.

An elaborate memoir has very recently appeared in the Transactions of the Linnean Society, by the late Mr. W. Griffiths, "on the Structure and Affinities of Plants Parasitical on Roots." These singular productions have been regarded by several distinguished botanists as forming one natural class

which they have called *Rhizantha*. Mr. Griffiths, on the other hand, who was eminently qualified, both as a systematic and physiological botanist, to judge of such a question, has adopted the opposite view taken by other observers, namely, that these plants really belong to several distinct, and not even nearly related, families; the points of internal structure and external appearance, which they have in common, arising from the peculiar mode in which they receive their nourishment.

There is no stronger or more deeply rooted popular belief, than that of the effect of the moon upon the changes of the weather. The most careful experiments have been made lately, to ascertain whether there is any ground for believing the moon's attraction to act upon the atmosphere. These have resulted in establishing, beyond a doubt, the existence of *tides in the air*, as well as in the water, which surround the earth.

The doctrine of the influence of the moon and of the sun on the tides was no sooner established, than it became eminently probable that an influence exerted so strongly upon a fluid so heavy as water, could not but have the lighter and all but imponderable fluid of air under its grasp. I speak not of the influence attributed to the moon in the popular language and belief of nations ancient and modern—of Western Europe and of Central Asia, in respect to disease; but of the direct and measurable influence of the moon and of the sun in respect to the air. It is now clear, as the result of the observations at St. Helena by my friend Col. Sabine, that as on the waters, so on the atmosphere, there is a corresponding influence exerted by the same causes. There are tides in the air as in the sea; the extent is of course determinable only by the most careful observations with the most delicate instruments; since the minuteness of the effect, both in itself and in comparison with the disturbances which are occasioned in the equilibrium of the atmosphere from other causes, must always present great difficulty in the way of ascertaining the truth—and had, in fact, till Col. Sabine's researches, prevented any decisive testimony of the fact being obtained by direct observation. But the hourly observations of the barometer made for some years past at the Meteorological and Magnetical Observatory at St. Helena, have now placed beyond a doubt the existence of a lunar atmospheric tide. It appears that in each day the barometer at St. Helena stands, on an average, four thousandths of an inch higher at the two periods when the moon is on the meridian above or below the pole, than when she is six hours distant from the meridian on either side; the progression between the maximum and minimum being more-over continuous and uninterrupted:—thus furnishing a new element in the attainment of physical truth; and, to quote the expression of a distinguished foreigner now present, which he uttered in my own

house when the subject was mentioned, "we are thus making astronomical observations with the barometer"—that is, we are reasoning from the position of the mercury in a barometer, which we can touch, as to the position of the heavenly bodies which, unseen by us, are influencing its visible fall and rise. "It is no exaggeration to say," and here I use the words of my friend, the Rev. Dr. Robinson,—"that we could even, if our satellite were incapable of reflecting light, have determined its existence, nay, more, have approximated to its eccentricity and period."

I am unwilling to quit this subject without expressing my deep sense of the services rendered to science by the patient, laborious, unobtrusive observation and researches of my eminent friend, Col. Sabine, in meteorology, and above all, magnetism, in connection with different and very distant points of the earth: researches undertaken, some of them, before public attention was so generally called to the subject as it has been in later years—(since the British Association urged the importance of such investigation upon the government at home; and undertaken at great sacrifice of domestic comfort, and at the risk of life, not in the ordinary duties of his noble profession, but in the pursuit of science for its own sake—science, one year at the North Pole, and the next, I think, in Sierra Leone. The reputation thus acquired does not come quickly, but it comes surely; and will survive permanently; and the reputation of the individual adds to the reputation of his country.

The following remarks on *Astronomy*, alluding to the greatest discovery of the age, will be read with interest by all:

I begin with Astronomy.—The progress of astronomy during the past year has been distinguished by a discovery the most remarkable, perhaps, ever made as the result of pure intellect exercised *before* observation,—and determining *without* observation the existence and force of a planet; which existence and which force were subsequently verified *by* observation. It had previously been considered as the great trial and triumph of dynamical science, to determine the disturbances caused by the mutual action of "the stars in their courses," even when their position and their orbits were fully known; but it has been reserved for these days to reverse the process, and to investigate from the discordance actually observed, the existence and the place of the wondrous stranger which has been silently, since its creation, exerting this mysterious power. It was reserved for these days to track the path and to measure the force which the Creator had given to this hitherto unknown orb among the myriads of the air.

I am aware that Lalande, more than fifty years ago, on two nights—which, if he had pursued the object then first discovered, would have been well distinguished from the rest of the year, and would have added new glory to his own name—did observe what is now fully ascertained to have been the planet Neptune; but though Uranus had just been added to those bright orbs which to mortal eyes for more than two thousand years have been

known to circle our sun, Lalande was observing before Piazzi, Olbers, and Harding, had added Ceres, Pallas, Juno and Vesta to that number, and before by those discoveries it was proved, not only that the planets round the sun had passed the mystic number of seven—since Herschel had confuted that ancient belief—but that others might also remain to reward the patient labors of other observers. He therefore distrusted his own eyes; and preferred to believe that he had been mistaken, rather than that the existence and force of a new planet had been reserved for the discovery of this latter age. What his eyes saw, but what his judgment failed to discriminate and apply, has since become a recognized fact in science.

I will not presume to measure the claims of the two illustrious names of Leverrier and Adams; of him, who, in midnight workings and watchings, discovered the truth in our own country, and of the hardly happier philosopher who was permitted and enabled to be the first, after equal workings and watchings, to proclaim the great reality which his science had prepared and assured him to expect. I will trust myself with only two observations: the one, my earnest hope that the rivalry not merely of the illustrious Leverrier and of my illustrious countryman, Adams, but of the two great nations which they represent, France and England, respectively, may always be confined to pursuits in which victory is without woe, and to studies which enlarge and elevate the mind, and which, if rightly directed, may produce alike glory to God and good to mankind: and the other, my equal hope, that for those (some of whom I trust may now hear me) who employ the same scientific training, and the same laborious industry which have marked the researches of Leverrier and Adams, there may still remain similar triumphs in the yet unpenetrated regions of space; and that—unlike the greater son of a great father—they may not have to mourn that there are no more worlds to be conquered.

It is a remarkable fact, that the seeing of the planet Neptune was effected as suddenly at Berlin by means of one of the star-maps which has proceeded from an association of astronomers chiefly Germans; such maps forming in themselves a sufficient illustration of the value of such associations as our own, by which the labor and the expense—too great, perhaps, for any one individual—are supplied by the combined exertions of many kindred followers of science.

It is another result of the circulation of these star-maps, that a new visitor, a comet, can hardly be within the range of a telescope for a few hours, without his presence being discovered and announced through Europe. Those comets which have been of larger apparent dimensions, or which have continued longer within view, have, in consequence, for more than two thousand years, been observed with more or less accuracy; their orbits have been calculated; and the return of some has been determined with a precision which in past ages exercised the wonder of nations;—but now, improved maps of the heavens, and improved instruments, by which the strangers who pass along those heavens are observed, carry knowledge where conjecture lately dared not to penetrate. It is not that more

comets exist, as has sometimes been said, but more are observed.

An Englishman—a subject of this United Kingdom—cannot refer to the enlarged means of astronomical observation enjoyed by the present age, without some allusion to the noble Earl, Lord Rosse, one of the Vice Presidents of this day, who, himself educated amongst us here in Oxford, has devoted large means and untiring labor to the completion of the most wonderful telescope which science, art, and wealth have ever yet combined to perfect; and which the Dean of Ely—a man worthy to praise the work—pronounced to be a rare combination of mechanical, chemical, and mathematical skill and knowledge. Its actual operations have been suspended by a cause not less honorable to Lord Rosse in another character, than the conception and early progress of his great instrument were to him as a man of science. They have been retarded, so far as he himself is concerned, by the more immediate and, I will say, higher duties which, as a magistrate, as a landowner, and as a Christian gentleman, he owed, and has been paying to his neighbors, his tenantry, and his country, during the late awful visitation which has afflicted Ireland. Yet perhaps my noble friend will permit me to say, that while we not only do not blame him—we even praise him cordially for having devoted his time, his mind, and his wealth to those claims which could not be postponed, since they affected the lives of those who in God's providence surrounded him—there were, and there are others, two at least in his own country, and one his most illustrious friend, Dr Robinson, (but I speak without any communication on the subject from that great observer and greater philosopher,) who might have carried on the series of observations which this wonderful telescope alone can effect, and might thus have secured for his own division of the empire, the discovery of the planet Neptune.

The Catalogues of Lacaille and the *Histoire Céleste* are now before the world; and with the Catalogue of our Association, constitute a series of most important gifts conferred on astronomy. I have already said that I will not presume to measure the relative merits of two eminent individuals; it is as little within my power to measure the value of such gifts to science. That value can be duly appreciated by none but the great masters of this, the greatest of sciences; but I may be permitted to add, that here, also, come into beneficial action, the powers and uses of such an association, which, rising above the mere calculations of pecuniary profit, provides for the few who only are capable of extracting the just benefit from such works, those materials of advancing knowledge which are beyond the reach of individuals.

While the telescope is busy exploring the heavens with such astonishing results, the microscope is no less successfully employed in making new revelations regarding the wonderful laws of the Creator in our own bodies, and those of almost every substance

on the globe. The remarks on the *Physiological Discoveries* of EHRENBURG and others, at the close of the following extract, are the strongest illustrations of this:

In physiology, the most remarkable of the discoveries, or rather improvements of previous discoveries, which the past year has seen, is, perhaps, that connected with the labors of the distinguished Tuscan philosopher, Matteucci; who, on several former occasions, has co-operated with the Association in the sections devoted to the advancement of the physical and physiological sciences. I refer in this instance to his experiments on the generation of electric currents by muscular contraction in the living body. This subject he has continued to pursue; and, by the happy combination of the rigorous methods of physical experiment with the ordinary course of physiological research, Prof. Matteucci has fully established the important fact of the existence of an electrical current—feeble, indeed, and such as could only be made manifest by his own delicate galvanoscope—between the deep and the superficial parts of a muscle. Such electric currents pervade every muscle in every species of animal which has been the subject of experiment; and may therefore, be inferred to be a general phenomena of living bodies. Even after life has been extinguished by violence, these currents continue for a short time; but they cease more speedily in the muscles of the warm-blooded than in those of the cold-blooded animals. The Association will find his own exposition of the physiological action of the electric current in his work, "*Leçons sur les Phénomènes Physiques des Corps Vivants*," 1847.

The delicate experiments of Matteucci on the Torpedo, agree with those made by our own Faraday (whom I may call doubly our own in this place, where he is a Doctor of our University) upon the *Gymnotus electricus*, in proving that the shocks communicated by those fishes are due to electric currents generated by peculiar electric organs, which owe their most immediate and powerful stimulus to the action of the nerves. In both species of fishes the electricity generated by the action of their peculiar organized batteries—besides its benumbing and stunning effects on living animals—renders the needle magnetic, decomposes chemical compounds, emits the spark, and, in short, exercises all the other known powers of the ordinary electricity developed in inorganic matter, or by the artificial apparatus of the laboratory.

ETHERIZATION, a kindred subject,—one to which deep and natural importance is attached,—may not unfitly follow the mention of Prof. Matteucci's investigations.

It is the subject of the influence of the vapor of ether on the human frame—a discovery of the last year, and one the value of which in diminishing human pain has been experienced in countless instances, in every variety of disease, and especially during the performance of trying and often agonizing operations. Several experiments on the tracts and nerve roots appropriated respectively to the functions of sensation and volition, have been resumed and repeated in connexion with this new agency on

the nervous system. Messrs. Flourens and Longet have shown that the sensorial functions are first affected, and are completely, though temporarily, suspended under the operation of the vapor of ether; then the mental or cerebral powers; and finally, the motor and excito-motor forces are abrogated. It would seem that the stimulus of ether applied so largely or continuously as to produce that effect is full of danger—and that weak constitutions are sometimes unable to rally and recover from it; but that when the influence is allowed to extend no further than to the suspension of sensation, the recovery is, as a general rule, complete. It is this remarkable property of ether, which has led to its recent application with such success as may well lead us to thank God, who, in his providence, has directed the eminent physicians and surgeons amongst our brethren in the United States to make this discovery; a discovery which will long place the name of Dr. Charles T. Jackson, its author, among the benefactors of our common nature.

At the same time, much careful observation on the *modus operandi* of this most singular agent, seems still requisite, before a general, systematic, safe, and successful application of it can be established for the relief of suffering humanity. So great, however, is the number of well-recorded instances of its having saved the patient from the pain of a surgical operation without any ill effect in reference to his subsequent recovery, as to make the subject of the influence of the vapor of ether upon the nervous system, and the modification of that influence on different temperaments, one eminently deserving the attention of the physiological section of the British Association.

With regard to the functions of the primary division and parts of the brain itself, there has been of late a happy tendency to substitute observations on the modifications of those parts in the series of the lower animals in the place of experimental mutilations on a single species, in reference to the advancement of cerebral physiology. Experiment is, no doubt, in some instances, indispensable: but we ought ever to rejoice when the same end is attained by comparative anatomy rather than by experimental vivisections; and every true philosopher will concur with my most eminent friend, Professor Owen, in his doubt, (I quote his own words,) "whether nature ever answers so truly when put to the torture, as she does when speaking voluntarily through her own experiments, if we may so call the ablation and addition of parts which comparative anatomy offers to our contemplation."—Owen's Hunterian Lecture, Vertebrata, p. 187.

I was always struck with that passage in the "Life of Sir. W. Jones," in which that great man, who united so many claims to the admiration of mankind, declined to accept the offer of a friend to collect, and in collecting to put to death, a number of insects in the eastern islands, to be transmitted to Calcutta. He did not, of course, deny the value and importance, and, in one sense, the necessity, of forming such collections; but he limited the right of possessing them to those who could use them; and he would not have one of those, the wonders of God's animal world, put to death for the mere gratification of his own unscientific cu-

riosity. He quotes the lines of Ferdusi, for which Saadi invokes a blessing on his spirit, and the last of which contains all my own morality in respect to the lower animals :

'O spare you emmet, rich in hoarded grain,
He lives with pleasure, and he dies with pain.'

I am aware that the doctrine assumed in the first line of the couplet, in reference to a particular insect, is denied by some naturalists ; and that the fact assumed in the last line, in reference to the lower animals, is denied by others. Whatever be the truth as to the first point, I have no more doubt than I have of my own existence, that some of the lower animals feel severe pain : and even if the words of our immortal Shakspeare as to the corporal sufferance of the beetle trod upon be not literally accurate—yet who is entitled to affirm the contrary ? This, I think, is clear, that the child who is indulged in mutilating or killing an insect for his own pleasure, has learnt the first lesson of inhumanity to his own species.

In no department of the science of organised bodies, has the progress been greater or more assured than in that which relates to the microscopic structure of the constituent tissues of animal bodies, both in their healthy and in their morbid states ; and this progress is specially marked in this country during the period which has elapsed since the communication to the British Association by Professor Owen, of his researches into the intimate structure of recent and fossil teeth.

The result of these researches having demonstrated the constancy of well-defined and clearly appreciable characters in the dental tissues of each species of animal, (by which characters such species could be determined in many instances, by the examination of a fragment of a tooth,) other observers have been stimulated to pursue the same minute inquiries into the diversities of structure of the tissues of other organs. Such inquiries, for example, have been most ably and successfully pursued by Dr. Carpenter, in reference to the microscopic structure of recent and fossil shells ; and the anatomist, the naturalist, and the palæontologist, are alike indebted to the zeal and the skill of that eminent physiologist ; while, in another sense, all are indebted to the British Association for aiding and stimulating his inquiries, and for the illustrations with which the publication of Dr. Carpenter's Report has been accompanied in the transactions of the Association.

The *hairs* of the different mammalian animals offer to the microscopical anatomist a field of observation as richly and remarkably developed as the *teeth*, which formed the subject of Professor Owen's communication in 1835, and as the external coverings of the testaceous molusca, which formed the subject of Dr. Carpenter's communication in 1846.

The structure of the softer tissues of the animal frame has not been less successfully investigated by microscopic observers. One of the most extraordinary, perhaps, of the recent discoveries by the microscope, is that which is due chiefly to Purkinje and Valentin, and which in this country have been well established by Dr. Sharpey, relative to the important part in the motion of fluids on inter-

nal substances, performed by the vibratile action of myriads of extremely minute hairs or cilia which beset those surfaces. These ciliary movements for example, raise the mucus of the windpipe to the throat against gravity. They have been detected in the ventricles of the brain, as well as many other parts.

Microscopic anatomy has been chiefly indebted to Ehrenberg, Remak, and Dr. Martin Barry, for the exposition of the ultimate structure of the nervous and cerebral fibres.

Exact knowledge of the nature of the retina, or the vitreous and crystalline humors, and of other delicate constituents of the organ of vision—the most wonderful of all the organs with which God has entrusted man—has been remarkably advanced by the skilful use of the improved microscopes of the present day. I rejoice that, among the proposed arrangements of the Association at its present meeting, one evening, Tuesday the 29th, will be specially devoted to an exhibition of microscopic objects. The beautiful discoveries of Sir David Brewster, (whom, in this Association, we must always mention as one of our earliest friends and patrons, three times one of our Vice-Presidents,) have been carefully confirmed ; and many interesting varieties have been noticed in the structure of the crystalline lens of the eyes of different species of animals.

The most brilliant result, perhaps, of microscopic anatomical research has been the actual observation of the transit of the blood from the arteries to the veins ; the last fact required—if, indeed, such an expression be allowable—for the full proof of Harvey's doctrine of the circulation of the blood. Malpighi first observed the transit in the large capillaries of the frog's web. It has since been observed in most other tissues, and in many other animals.

No part of the animal body has been the subject of more, or of more successful, researches than the blood itself. The forms and dimensions and diversities of structure characteristic of the colored discs, corpuscles, or blood globules, as they were once termed, in the different classes, orders and genera of animals, have been described, and for the most part accurately depicted ; and through the concurrence of numerous observers, the anatomical knowledge of these minute particles, invisible to the naked eye, has become as exact and precise as the knowledge of the blood vessels themselves, or of any other of the grosser and more conspicuous systems of organs ; and has added,—when we consider how easily the action is deranged, by how many causes it may be diseased or stopped—another to the many proofs that we are fearfully as well as wonderfully made. In surveying how our frame is formed, how sustained, how revived by sleep, one of the most wondrous of all the incidents of our nature, what suffering is produced by any pressure on the lungs, and yet how unconsciously we breathe a million times in health for one in sickness—I cannot but feel that our heavenly Father gave another proof of His essential character, when, in answer to the prayer of Moses, "Shew me thy glory," God answered, "I will cause *all my goodness* to pass before thee."

It has often been said, that it is one of the happiest circumstances for *progress* in this country, that there are few or none of the strongly entrenched old prejudices to contend with among us, that so continually stand in the way of all new inventions abroad. The *magnetic telegraph* is at the present moment a proof of this. Although the principle is well understood in England, at the present moment, and the fact of its daily use over hundreds of miles in the United States, is a matter of public notoriety, there is as yet not a single extended line of telegraphic communication by this means in Great Britain; and it will be observed that the President of the British Association, in his remarks on this subject, is obliged to draw his illustrations from this side of the Atlantic:

The extension of the means of communication by the *ELECTRIC TELEGRAPH* is yearly facilitating intercourse, almost as rapid as light or as thought, between distant portions of England, and between distant provinces in the vast empire of our Queen.

The last pamphlet which I had in my hand before leaving home yesterday, was a report presented to the Legislative Council and Assembly of New Brunswick, relative to a project for constructing a railway, and with it a line of electro-magnetic telegraph, from Halifax to Quebec.

Distance is time; and when by steam, whether on water or on land, personal communication is facilitated, and when armies can be transported without fatigue in as many hours as days were formerly required, and when orders are conveyed from one extremity of an empire to another almost like a flash of lightning, the facility of governing a large state becomes almost equal to the facility of governing the smallest. I remember, many years ago, in the *Scotsman*, an ingenious and able article showing how England could be governed as easy as Attica under Pericles; and I believe the same conclusion was deduced by William Cobbett from the same illustration.

The system is daily extending. It was, however, in the United States of America that it was first adopted on a great scale, by Prof. Morse in 1844; and it is there that it is now already developed most extensively. Lines for above 1,300 miles are in action, and connect those States with her Majesty's Canadian Provinces; and it is in a course of development so rapid, that, in the words of the report of Mr. Wilkinson, to my distinguished friend, his Excellency Sir W. E. Colebrooke, the governor of New Brunswick, to which I have just adverted, "No schedule of telegraphic lines can now be re-

lied upon for a month in succession, as hundreds of miles may be added in that space of time. So easy of attainment does such a result appear to be, and so lively is the interest felt in its accomplishment, that it is scarcely doubtful that the whole of the populous parts of the United States will, within two or three years, be covered with a telegraphic network like a spider's web, suspending its principal threads upon important points along the seaboard of the Atlantic on one side, and upon similar points along the lake frontier on the other." I am indebted to the same report for another fact, which I think the Association will regard with equal interest. "The confidence in the efficiency of telegraphic communication has now become so established, that the most important commercial transactions daily transpire, by its means, between correspondents several hundred miles apart. Ocular evidence of this was afforded me by a communication a few minutes old, between a merchant in Toronto and his correspondent in New-York, distant about six hundred and thirty-two miles." I am anxious to call your attention to the advantages which other classes also may experience from this mode of communication, as I find it in the same report. When the Hibernia steamer arrived in Boston, in January, 1847, with the news of the scarcity in Great Britain, Ireland, and other parts of Europe, and with heavy orders for agricultural produce, the farmers in the interior of the state of New-York, informed of the state of things by the magnetic telegraph, were thronging the streets of Albany with innumerable team loads of grain almost as quickly after the arrival of the steamer at Boston as the news of that arrival could ordinarily have reached them. I may add, that, irrespectively of all its advantages to the general community, the system appears to give already a fair return of interest to individuals or companies who have invested their capital in its application.

The larger number of the members of this Association have probably already seen in London an exhibition of a patent telegraph, which prints *alphabetical* letters as it works. Mr. Brett, one of the proprietors, obligingly showed it to me; and stated that he hoped to carry it into effect on the greatest scale ever yet imagined on the American continent. Prof. Morse, however, does not acknowledge that this system is susceptible of equality with his *telegraphic* alphabet for the purpose of rapid communication; and he conceives that there is an increased risk of derangement in the mechanism employed.

I cannot refer to the extent of the lines of the electric telegraph in America without an increased feeling of regret that in our own country this great discovery has been so inadequately adopted. So far, at least, as the capital is concerned, the two greatest of our railway companies have not, I believe, yet carried the electric telegraph further from London than to Watford and Slough: an enterprise measured in the United States by hundreds of miles being measured by less than scores in England.

In England, indeed, we have learnt the value of the electric telegraph as a means of police in more than one remarkable case: as a measure of govern-

ment it is not less important ;—from the illustration which I have drawn from America, it is equally useful in commerce ; but as a measure almost of social intercourse in the discharge of public business, it is not without its uses also. The day before yesterday I had an opportunity of examining the telegraph in the lobby of the House of Commons, by which communications are made to and

from some distant committee-room. As a specimen of the information conveyed from the House is the following :—" Committee has permission to sit until five o'clock ;" and among the questions sent down from the committee are the following :—" What is before the House ?" " Who is speaking ?" " How long before the House divides ?"

FOREIGN NOTICES.

PROPAGATION OF PLANTS FOR NEXT SEASON.—The summer garden is now in its glory, and amply repays its possessor for all his expense, labor, and care. Verbenas, Petunias, and other creeping plants, nearly cover the beds ; Pelargoniums, Salvias, and Fuchsias have assumed their deep and rich tints, and Dahlias rule over the whole in profuse magnificence. The amateur begins to take breath for awhile, and basks in the paradise himself has created. Weeds are now less luxuriant, and lawns appear to repose in their rich green, sometimes, indeed, too much embrowned by the summer suns. From the present time to the middle of September, this beauty will rather increase than diminish, and the labor demanded will be less than at earlier seasons of the year.

But we must intrude upon this state of repose by the note of warning, and remind the amateur, that if he wishes a repetition of the scene before him next year, he must propagate at once. Many plants should now be well rooted—such as Wall-flowers, Pinks, and Carnations ; biennials should be sown, and Roses budded. But it is to the propagation of exotic plants, requiring the management of a frame, that I now call attention, and would advise the following mode of treatment :—First, let a gentle hot-bed be made. If you have a spent Melon or Cucumber bed, that will do, if the old dung is mixed, to the depth of a foot, with leaves and mowings of Grass. You may either insert your cuttings in the mould, in the frame, or in pots. The latter plan is preferable on many accounts ; the cuttings strike easily against the sides of the pots, and they can be moved more readily. Indeed many things will be best left together in the striking pots until the spring, and consequently they should be grown in a vehicle which can easily be removed. The soil should be fine, yet porous, having a good portion of sand mixed with it.

As a general rule, the cuttings should be wood of this year's growth, having consistency and strength at the part to be inserted in the ground. Pelargoniums strike without any difficulty, and will scarcely fail under the most ordinary management ; other plants are more difficult, yielding more easily to damp, wind, &c. Let every cutting be taken off at a joint, and inserted firmly into the soil. If the soil is moist, water need not be applied, except in small portions. It often happens that an excess of water causes a cutting to perish. Skill is shown in keeping the leaves from drooping ; for if they do so to any extent they seldom recover their crispness ; and every gardener knows that a cutting with half-

withered leaves has little chance. Place the pots in the frame as soon as they are filled, and keep them close for a few hours. Attentively watch them ; pick off dead leaves, and maintain a gentle heat. By treatment of this kind, and by remembering the different habits of the woody and the succulent varieties, you will accomplish your purpose, and be independent of nurserymen and friends another year. Do not be afraid of having too many ; but cut wherever you can without injuring the beauty of your beds. Some are sure to die, and by misfortune many may. Provide an abundance, and then you will be able to do to others as you are often glad they should do to you—give some away.

In looking over the propagating department of the garden at Putteridge, belonging to Col. Sowenby, I was surprised to find that under the hot suns of May, thousands of cuttings just put in did not flag in the least, although they had no shade but the glass. Mr. Fish informed me that this was accomplished by keeping the plants a sufficient distance from the glass. By this simple arrangement the light becomes diffused before it reaches the plants ; whereas, if the glass were too near, they would require shading, or be parched up. With these hints, added to his own experience and observation, it is hoped the reader will secure for himself another season of as great beauty and abundance as I presume he is enjoying at the present time.—*H. B. Gardener's Chronicle.*

MILDEW IN THE PEACH TREE.—Without saying anything for or against the curative effects of Chamomile, I may state a circumstance or two which have come under my notice. When in Ireland, some years back, on calling on Mr. Christie, then gardener to the Duke of Leinster, at Carton, he pointed out two peach trees, on an east aspect, which he said for years had been infested with mildew ; but, at the suggestion of a friend, he had planted *chamomile* at the base of the wall on which they were trained. At the time I saw them, the trees were as clean as they could be. While at Soham, the Rev. J. Calthrop, of Isleham, an enthusiastic amateur gardener, related an instance to me of a friend who had cleared his peach trees of mildew in the same manner. It is but justice to say, Mr. Calthrop had but little faith in the chamomile, though he could vouch for the disappearance of the disease from his friend's garden. For my own part, to use a familiar phrase, I have always regarded it as an old woman's story,—but I "tell the tale as 'twas told to me." *W. P. Ayres, Ibid.*

DOMESTIC NOTICES.

RAISING MAGNOLIAS FROM SEED—*Dear Sir:* In the May number of the Horticulturist, you gave us a very interesting article on the *Chinese Magnolia*, and in speaking of one in your garden, of which you gave us a portrait, you remark that it last year gave you quite a crop of fine large seeds, from which you hope to raise many plants. Now this is to inquire whether the various kinds of Magnolias, and particularly the *American sorts*, can be successfully cultivated from the seed, and, if so, what is the process? By giving this information through the columns of the Horticulturist, I have no doubt you will gratify many of your readers, who have been as unfortunate as myself.

I have sown the seed of several of the *American sorts*, particularly *M. acuminata* and *M. macrophylla*, in both the fall and spring, and they have invariably failed, and I have never yet been able to raise a single tree from the seed; and my attempts with the Mountain Ash (*Sorbus aucuparia*), by seed has been equally *unsuccessful*, never succeeding in a single instance.

Any information that will enable us to cultivate those beautiful trees successfully from the seed, will, I dare say, be gratifying to many of your readers, and will be peculiarly so to your very humble servant. *A Subscriber. Burlington, Iowa, Aug. 5th, 1847.*

[REMARKS.—All the Magnolias which produce seeds may be raised in this way, and we have this year succeeded in growing quite a number of young plants of the Chinese species alluded to. But the young seedlings are very tender and impatient of sun and wind *when just vegetating*, and hence, though occasionally seedlings may be raised successfully in the *open ground*, yet it is so uncertain that experienced cultivators consider it a waste of the seeds to sow them there.

A certain mode of raising Magnolias of all kinds from the seeds, is as follows: Gather the seeds as soon as ripe. About the middle of October make some boxes of rough boards, about six inches deep, two feet wide, and three feet long. Fill these boxes to within one inch of the top with good rich sandy loam, and if a third *leaf-mould* (the rich soil in old woods) is added to it, is still better. Then plant the seeds about two inches apart, and cover them with an inch of soil—this will fill the box to a level with its top, and when the whole is gently pressed down, watered and allowed to settle, it will be depressed from one to two inches. This will allow space for the necessary supply of water.

The winter quarters of these boxes of seeds may be a cellar, if there is no danger of rats. But where many seedlings are grown in this way, it is usual to place a rough board frame, like a common hot-bed frame, in any sheltered position. Set the boxes in this, sinking them in the soil to a level with their tops. At the approach of winter cover them six inches deep with very dry leaves that fall from the trees, and cover the frame with the lights, or, if glass is not at hand, boards will do instead. The

latter should be removed once or twice in winter in mild rainy weather for a day or two.

When the spring opens, first uncover the frames, and afterwards remove the leaves. The boxes should now be regularly watered, and about the middle of May the seeds will begin to vegetate. As soon as this is perceived, take them out of the frame and place them in a situation, airy, but also shaded from all but the morning and evening sun. The shade should be that on the north side of a fence or building, and not that of trees. Here the boxes must remain all summer, being regularly watered every evening. In this way a fine crop of seedlings may be grown, with scarcely the failure of a single good seed.

In autumn, place the boxes in the cold frame, and treat them precisely as before. The next spring the young seedlings, which will be found to have made fine large roots, may be transplanted into the nursery rows. The soil should be deep, and if rather damp and full of vegetable matter, the growth will be the more luxuriant.

If "A Subscriber" will pour *boiling water* upon the berries of the Mountain Ash, let it stand for a couple of hours, and then rub out the seeds before planting them, he will be more successful. All the seeds planted (as they should be) in autumn, are much more certain to vegetate in the spring, if the surface of the ground over the drills or beds is covered a couple of inches deep with some light substance, such as old tan, black bog earth, or leaves. This both keeps the soil about the seeds in an uniform state of moisture, and prevents the surface from becoming so hard by the action of the spring rains and winds that the germinating plants cannot burst through it.—Ed.]

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MULCHING.—I have this season found by experience the value of *mulching* transplanted trees, as recommended in the *Fruits and Fruit Trees of America*. I planted about 150 trees in an orchard in very good but rather dry soil. They were all planted with equal care, but about one-third of them I *mulched*—i. e. covered the surface of the ground after planting with 6 inches of litter. They all started alike. Among those not *mulched*, I have lost 15, while there has not been a single death among those *mulched*. Probably they would all have grown had the month of July been cool and moist; but when the hot weather came, many of those not *mulched* dried off. I consider, from observation this season, that *mulching* is preferable to watering. Yours. B. Hudson, N. Y., Aug. 5th, 1847.

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THE CHINESE PEAR-TREE, (*Pyrus sinensis*.)—This, which in point of foliage we consider the most ornamental of all fruit trees, appears to be rare and little known in this country. It is perfectly hardy, and well deserves a place in all *ornamental plantations*, though its fruit is of no value. Its leaves are two or three times the size of those of the common pear tree, broader, glossy on the up-

per surface, and having somewhat the appearance of those of an evergreen laurel or magnolia. Its blossoms, white, tinted with pink, appear in April. The fruit is apple-shaped, warted and gritty. It is a native of China; where its local name is *Shalee*. It is also called in some English gardens, the *sand pear*, or *snow pear*.

There is a handsome specimen of this tree at Netherwood, the interesting seat of JAMES LENOX, Esq., Dutchess county, N. Y. It is about 20 feet high, with an elliptical head, and its broad shining foliage renders it a striking object in the pleasure grounds.

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FOOD AND CLIMATE OF THE MAMMOTH.—It has, for some time past, been a subject of speculation among naturalists, how the mammoth, whose structure and inferred habits considerably resemble those of the elephant, could have lived in a climate so far north as his remains are now found.

CUVIER, and other naturalists, proposed as a solution of the difficulty, the theory of sudden revolution on the earth's surface, which changed what was previously a hot zone of climate into one of low temperature, where this immense quadruped was no longer able to exist.

Prof. OWEN, in his *British Fossil Mammalia*, has, however, we think, conclusively proved that the mammoth was an animal quite differently organized from the existing species of elephants, and entirely fitted to endure a northern winter. The evidence upon which this conclusion is based, is not that drawn from an examination of the skeleton, which would never have satisfactorily demonstrated it; but from the inspection of the entire mammoth found at the mouth of the river Lena, in a complete state of preservation, imbedded in the icy cliffs and frozen soil of that coast. This carcass was so perfect that not only was all the flesh on the bones, in every part, and the brain perfect, but the *skin was covered with hair, and there was a long mane on the neck*. The skin was about half an inch thick, and when stripped from the carcass, weighed so much that ten men found it difficult to carry it a short distance.

The fact that the skin of this gigantic animal was well clothed with hair, and a more careful examination of perfect specimens of its teeth, has led Prof. OWEN to the conclusion that the mammoth was as perfectly fitted as the reindeer and the moose to exist in high northern latitudes.

The greater complexity and dense coating of enamel in the teeth of the mammoth, as compared with those of the elephant, justify us, he thinks, in believing that the former fed not only on the foliage of trees, but that the *branches* of the same formed a large part of his sustenance. He must have been able to masticate perfectly, while his hairy coat fitted him for the temperature of a northern winter.

....

RICHARD'S PEAR.—Last spring we received from Syracuse, New-York, scions of a pear under this name, which was represented as a new seedling fruit of very high merit, surpassing in the estimation of some persons there, the *Onondaga Pear*. JAS. R. LAWRENCE, Esq., of that city has just favored us with a fine basket of specimens of this

variety. In his letter which accompanies them, he remarks that the variety is not known to any one there; that it is highly esteemed by all who have seen it, and that he is desirous of ascertaining if it is new to us.

We were quite surprised, on opening the basket, to find the Richards' pear was our old and familiar acquaintance, the *Summer Bon Chretien*. There was no mistaking its peculiarly swollen sides, or its luscious sweet flavor. It scarcely looks well to rechristen this ancient and venerable pear, which is supposed to be the *Regalia* of Valerius Cordus; which is so well known in every country in Europe, and which is described in every pomological work of note for the last century and a half! Near the sea-board it has become rather unproductive, and we are glad to find by the specimens we received from Syracuse, that, as we should have supposed, in the fine climate and soil of the interior, this most ancient of pears is still in perfection. But even with the large bonus of regeneration in Western New-York, it must not be allowed to gratify the "Richards" family by dropping its time-honored name of *Summer Bon Chretien*.

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CHAMPAGNE ON THE OHIO.—By a letter just received from our friend N. Longworth, Esq., Cincinnati, we learn that, by the assistance of an experienced *vigneron* from Europe, he has made from the last season's vintage of Catawba grapes, 6,000 bottles of champagne, which promises to be of superior quality, and will be fit for use next year.

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STRAWBERRIES.—The September number of your interesting periodical contains a communication from WM. R. PRINCE, professedly for the purpose of correcting an alleged mis-statement of Mr. HOVEY, in the August number of his Magazine, with respect to the exhibition of the Long Island Horticultural Society in June last; Mr. Hovey having stated that at such exhibition "Hovey's Seedling received the premium for three quarts, in competition with upwards of thirty other varieties," whereas Mr. Prince alleges, that "no other kind whatever was offered in competition for the three quart premium, the thirty varieties being exhibited in small quantities of a pint or less as a collection, and a premium was awarded to them;" further—"that the case was similar at the exhibition in New-York, where a premium was also awarded." Now, I would ask, why was no other variety offered in competition for the three quart premium? It is not to be supposed possible that Mr. PRINCE, who claims to be the "Proprietor of the Nurseries at Flushing," which are understood to be very extensive, and have enjoyed some celebrity, (though until the appearance of his advertisement in the two last numbers of the Horticulturist, and in other Journals, it was not known that he had become the proprietor of the whole of them; and who states, in the communication referred to, that "he has above sixty estimable varieties, more than twenty of which would be pronounced superior to the Hovey, where flavor was considered," and in his Catalogue, issued three years since, that "the plants occupy an acre of ground;" I repeat that it cannot be conceived possible, with such an immense collection,

cultivated *per catalogue* for years, that Mr. PRINCE could not on one day, gather three quarts of any one variety to offer in competition. especially of the "*Crimson Cone*," which, as appears *per catalogue* of 1844, he has cultivated for more than three years, is so *plentiful* as to have become a market fruit; and per his statement, so far superior to the Seedling, that "the great venders in the New-York market could not sell the latter until the stock of the former was exhausted;" and the inference is irresistible, that he could not produce any variety to compete with Hovey's Seedling in the three important essentials of *flavor, size, and beauty*; hardihood and productiveness, other necessary qualities to constitute "*the best*" strawberry, the judges could not pass upon from the mere inspection of the fruit, and which Hovey's Seedling are well known to possess in an eminent degree. Mr. PRINCE admits the great size and beauty of the Seedling, but states it to be "deficient in flavor;" that he possesses more than twenty varieties superior to it in the latter quality; and wishes it to be inferred, that the quantity required of one variety (3 quarts) alone prevented him from entering into competition for that premium. Again, I ask, whether at each of the exhibitions referred to by Mr. PRINCE, a specific premium was not offered for the best single variety in a considerably less quantity than three quarts—even a half pint?—and whether he obtained such premium? The man who exhibits "so splendid a collection" (of strawberries) as "has never been seen in Europe or America," should be able to put down all competitors by being more to the purpose than his own panygeric. *Primæ, Primordiana, Charlotte, Eberlein, &c.*, (Mr. PRINCE's Seedlings,) should ere this have gained many premiums, for their merits are such, according to Mr. PRINCE's testimony, as to defy all attempts at excelling them. In inquiring "what will be said when those varieties will be sent in quantities to our markets," Mr. P. assumes what may never happen, as perhaps some of them may not be sufficiently prolific to be profitable to the market gardener, and others too deficient in flavor to be popular with consumers. It is true Mr. PRINCE was awarded the premium for the *largest collection*, seedlings in endless variety being easily raised; but which are mostly not worth propagating, and not one out of a thousand equal exist g varieties. The number of varieties exhibited, therefore, is of little consequence, further than making a display; the important question to the public is, the *quality* of the fruit, a material component part of which, as Mr. PRINCE himself insists, is *flavor*; which, however, cannot well be determined, if the "show cases" containing the fruit are kept *locked*, so that the judges even cannot have access to apply the requisite test, perhaps because it was feared *tasting* might not prove satisfactory, and the *appearance* of the fruit might sell the plants. If the vaunted new seedlings are so superior, it is surprising that Mr. PRINCE has not submitted them specifically to the judgment, and obtained a report of some Horticultural Society, as is usual. Hovey's Seedling is certainly not as high flavored as some other varieties; but taking into consideration its great size, beauty, and uncommon productiveness,

if properly cultivated, I esteem it upon the whole the *best variety now known for general culture*; and being "well known throughout the length and breadth of the land," and its high reputation well established, there is no occasion for Mr. Hovey's incessant blowing of the trumpet of its fame with every modulation, so that its friends are surfeited with its praise; and the rebuke administered to him by Mr. PRINCE is not amiss—for however valuable "Hovey's Seedling," Mr. H. has himself proclaimed that at least *one other variety* (and there possibly may be more) possesses "very desirable qualities;" and some *other* than the "Boston Pine" may be equally suitable for fertilizing his Seedling. It is manifestly unjust, both to the publishers and their patrons, for commercial gardeners to use the columns of a horticultural periodical as an advertising medium, thereby depriving the former of the compensation to which they are entitled for the insertion of such *advertisements in disguise* in their appropriate place, and the latter of the instruction they would derive from the insertion of valuable matter in the space thus given to subserve the purposes of an individual, and in which those who pay for such space, have little or no interest. *Wm. W. Valk. Flushing, Sept. 9, 1847.*

NECTARINE VS. PEACH.—Mr. Downing: Your "Cincinnati friend" has, as you requested, noticed the miracle at Portland, endorsed by you, [see August number] where a tree that produced perfect peaches the last year, was this year covered with a full crop of perfect nectarines. Prodigious! We have greater wonders here:—A gentleman of high standing two weeks since presented some fine plums to our Horticultural Society, which he assured them came from an apricot stone, planted in the first instance in a flower pot. I planted, twelve years since, in a small flower pot, three apricot stones, sent me from Mexico, in a triangular form; first cracking the stones. In their place came three forest trees, which I was assured were not natives in this latitude. On reading your note, I wrote to Portland to learn the *facts* in your case. The gentleman "planted four or five trees, *purchased as peach trees*, against a brick wall. He had no knowledge of the nectarine, and presumes there was not one grown in the city. The year before last, one of the trees adjoining the one which changed to a nectarine, bore five peaches of good size and quality. Last year the tree which now has nectarines, bore two peaches of rich flavor, and was the only tree that bore fruit in his garden last year. He found them on the ground, directly under the tree, and as he was in the habit of examining his trees *daily, and several times a day*, the peaches could not have been long upon the ground. They had escaped his observation on the tree, and *believe* they were hid by the thick foliage. That they came from the tree, he then and now *believes*. All are now in fruit, and all peaches, but the one tree." This evidence is about as strong circumstantial evidence as you have for believing the Boston nectarine was produced from a peach stone. The evidence in these cases, you must admit, is not as strong as in the case of my forest trees from the apricot stone, or the plum, from an apricot in Kentucky, opposite this city. The stone

was carefully planted in a flower pot, in Kentucky, and watched till it bore fruit. I require you to believe both these changes. When assured of your faith, I will believe your Portland witchcraft, as soon as I believe in the two miracles I have related, but not before. Had the transformation taken place in *Salem*, no one could have doubted, as greater wonders transpired there whilst they were still "in the woods." *Your Cincinnati Friend. Cincinnati, August 25, 1847.*

P. S. There are things about Boston as hard to believe.—They there have two varieties of Seedling Strawberries—the one "average 5½ inches in circumference, and the other 4, under ordinary cultivation." There can be no doubt of the fact, for it is stated in their Horticultural paper, and the strawberry committee, by their silence, endorse it. Their climate and soil must be more congenial to this fruit than ours, for with us the fruit will not average the half of that size. Does it with you? It seems strange to me that this fruit should sell so high, and be so scarce in Boston, when so well suited to the climate! I discover, by a late publication, that three of their gardeners, who bring the greatest supply to their market, did not sell more bushels in a year, than one of our gardeners does in a day. Whilst they there command 20 cents per quart, they are sold here for 5 cents.

THE NECTARINE ONLY A SUB-VARIETY.—*Dear Sir:* In a lot of Seedling Peaches which fruited the past season, from stones planted by myself, I had one tree which produced nectarines. Mr. LONGWORTH, of Cincinnati, must not be so faithless! Yours, *John M. Ives. Salem, Mass., Sept. 13, 1847.*

[REMARKS.—Our "Cincinnati friend" will see by the above note from Mr. IVES, that the "miracle" has also occurred in *Salem*! If he will now turn to the *Bon Jardinier*, the standard French work on Horticulture, he will see that there is no such distinct fruit as nectarine recognized by the authors of that work, who are the first practical and theoretical gardeners in France. In describing *Peaches* in that work, there are simply two classifications made, viz: *Pêches dureteuses*, (downy peaches—what we call peaches,) and *Pêches lisses* (smooth peaches—what we call nectarines.)—ED.]

PROTECTING TENDER ROSES.—In your first volume the subject of protecting tender Roses in winter was alluded to, but the very best method yet resorted to has not been published, so far as I know, in any periodical or book. It is practiced with wonderful success in this neighborhood, where there are many rose fanciers, especially among the ladies. Its extreme simplicity and economy strongly recommend it. For even the most tender tea roses it is perfect. Collect a number of cedar boughs, and stick them round the bushes, drawing them together into a cone at top, and slightly tying them there. The rose does not want protection from cold in our climate, but the tender kinds must be shielded from sleet and snow, and the cedars do this effectually. This information may save thousands of plants, and cultivators, instead of planting small ones every spring, may acquire large bushes. I have seen the

top of a considerable cedar tree cut down, and placed over a tender running rose with perfect success. *J. J. Smith. Germantown, near Philadelphia, Sept. 6, 1847.*

MELONS IN A CLAY SOIL.—Although there is so little difficulty in growing melons in New Jersey and Long Island, that the market gardeners raise them in fields by wagon loads, for the markets of New-York and Philadelphia, yet it is quite a different matter in many parts of New England. More especially is this the case in portions of it, where the soil is rather cold and clayey, as happens to be the fact in my own garden.

This year, for the first time, I have succeeded in getting a most abundant and most excellent crop of that high flavored and delicious musk melon, the "Citron;" and as I am sure there are others in the northern part of the Union who would be glad to arrive at the same result, I hasten to make known my mode for their benefit.

In the first place, as the melon loves a light and sandy soil, and mine is clayey and heavy, I begin by opening a trench in a suitable part of the garden, say fifty feet long, and three feet wide. To this trench I brought two cart loads of sand, and two cart loads of manure. These I mixed with the soil, and trenched the whole space of the size I have named about twenty inches deep—leaving it light and friable. This was done about the first of May.

I then sowed the melon seeds in a single drill along the centre of the trenched slip. In order to give them a little additional shelter, bring them forward rather earlier, and protect them from the ravages of the striped bug. I covered them, as soon as planted, with a rough frame, made of four pieces of board, six inches high. The frame is made like a box without a top and bottom, and it is a foot wide; the length of the board say twelve feet, and is covered on the top with millinet, or any cheap cotton stuff—if of the latter it is oiled. This, I find, gives protection enough to bring forward the melons three weeks earlier than if planted without protection; and if the boxes are laid away about the 1st of June, when they are no longer needed, they will last several years.

I have now (August 2d) a plentiful supply for my family from one row of the dimensions named, in soil, too, where I had not previously been able to get melons usually before the last of this month, and the crop a very precarious one then. Yours, *Northampton, Mass., August 2d, 1847.*

AMMONIACAL LIQUOR FOR MANURE.—Will some one of your chemical correspondents inform a plain unlettered farmer, where he can find "gas ammoniacal liquor," or a substitute for it? Landreth in his edition of Johnson's Dictionary of Gardening, directs, under the article "Weeds" a peck (?) of salt and a gallon of the above, added to a barrow load of weeds, and the whole immediately (?) becomes a saponaceous mass. It appears strange to me that Mr. Landreth, knowing, as he must know, that gas ammoniacal liquor is not to be had by one farmer in a thousand in this country, had not ex-

plained or proposed a substitute. In England, where the whole island is lighted with gas, gas liquor can be obtained readily, I suppose. *A Subscriber. New-Bedford, Sept. 1, 1847.*

P. S. It would appear to me that the manure made from a barrow of weeds and a peck of salt, would destroy vegetation entirely by the effect of such a quantity of salt—Would it not? What would be the value of the manure obtained in this way, compared with the cost of salt at 25 cts. per bushel, and a gallon of gas liquor? Perhaps you can suggest some cheaper substitute, or way of obtaining the same result.

[We think, on examining the article in the work referred to, that it is the *English editor's*, and not *Mr. Landreth's* direction; but owing to the plan adopted by the publishers of the American edition, it is impossible to tell who is the author of many articles, or parts of articles, contained in it.

Ammoniacal liquor can only be had at the gas works, in the large cities where gas is manufactured. It is a powerful manure, and requires to be diluted with five or six times its own bulk of water, before using it on grass or other growing crops. It may be transported to any distance in barrels.

A peck of salt and a gallon of this liquor (the latter diluted,) would be sufficient for four barrowfuls of weeds, which would then, after decomposition, make a strong manure. If our correspondent will mix his weeds and salt with barnyard manure, and water the heap with urine instead of the gas-liquor, as recommended by Prof. Lindley in our August number, he will find it a process far more economical, and the result equally satisfactory. *ED.*]

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EARLY JOE APPLE.—This is certainly a capital summer apple. We saw it repeatedly last season, and we again received specimens the first week in September from Messrs. ELWANGER & BARRY, Rochester, in fine order; the fruit beautiful in appearance, and the flavor that of the most delicate desert apple. Messrs. E. & B. remarked, in a note accompanying them and some other varieties, "these specimens of *Early Joe* were picked from an old tree so loaded that you could hardly see a branch or leaf."

The flesh of this variety is peculiarly marked with reddish stains; the form rather flat, beautifully striped with purplish-red on a pale ground. It is yet apparently little known out of Western New-York, but it must soon find its way into general cultivation.

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A NEW REMEDY FOR THE CURCULIO.—*Sir:* I made one of those accidental discoveries this season, which often prove more valuable than the results of a carefully conducted series of experiments.

This is no less than a preventive to the attacks of that most unconquerable enemy to all smooth stone fruit—the *Curculio*.

I have long been so troubled with this insect, that I have considered the plum tree of little value to me.

This season, wishing to stimulate a couple of old plum trees, which stood among others in my

fruit garden, I directed my gardener to place round each tree a couple of barrowfuls of fresh horse manure from the stable. This was accordingly laid on the surface of the ground, and as work was rather pressing at the time, it was suffered, though rather strong in ammonia, to lie thus for a fortnight. I think it was put about the trees just as the fruit began to swell, and before it became as large as peas. The result is, that these two trees are bearing a good crop of fruit, while every other plum tree in my garden has, as usual, been stung, and dropped all its fruit. There were no punctures, or scarcely any, to be found on the fruits of these two trees.

I understand from this, that the pungent fumes of the fresh stable manure, are so offensive to the curculio, that it avoids the trees under which it is placed. If this, on repetition, proves to be the case, we have, I think, a weapon against the depredator; for though the effect of the application is not the most agreeable one in a neat fruit or kitchen garden, yet no one would hesitate to resort to it, annually, if the curculio can be driven away by such means. Yours. *A Subscriber. Philadelphia, Aug. 10, 1847.*

[This is interesting, and we have some corroborative evidence. This season being one when insects of all kinds are unusually abundant, we have ourselves suffered somewhat from the attacks of the curculio, though not to such an extent as to prevent our having a moderate crop of plums, apricots, etc. But we observed some time ago, with some surprise, that upon a couple of large nectarine trees, growing directly against a fence which shuts in our stable yard, not a single fruit was punctured by the curculio, though other nectarine trees, sixty or eighty feet distant, did not escape. We attributed it at the time to the fumes from the litter thrown daily into the yard. Since our correspondent's experience, which is more direct, would appear to confirm the opinion, it will, as he suggests, be well to make a more extensive trial of the effect of a direct application next season.—*ED.*]

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COLOURED EDITION OF FRUITS.—The coloured edition of your work on Fruits, so anxiously looked for, is slow in making its appearance. When does it come out? Please answer in the Horticulturist, for the benefit of others as well as myself. Respectfully yours. *C. S. Wilson. Utica, N. Y. Sept. 11, 1847.*

[The delay is caused by our desire to have the plates executed as perfectly as possible. With this view we sent them to Paris to be coloured there. On receiving them, we found that although in the main beautifully executed, yet a few varieties were so indifferently coloured, that we could not consent to mar the work by inserting them. These were, therefore, obliged to be sent again to be retouched. Hence the great delay; but we hope to be able to announce the issue of the work complete in a few weeks more.—*ED.*]

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BEEES.—Will some of your correspondents, who have had experience in the matter, give me some practical information on the following subjects:—

1st. What are the best hives for keeping bees in ?
 2d. Is an apiary better placed in the midst of a garden, or in farm-like fields surrounded by woods?
 Yours, *A Constant Reader*.

COMMERCIAL GARDENING AT THE SOUTH.—We publish the following letter entire, (contrary to our usual practice with correspondence so complimentary to ourselves,) that those of our readers interested may judge of the spirit which leads the writer to encourage horticulture at the *South*, where we are obliged to say there has for a long time been a most extraordinary apathy on all branches of tasteful rural improvement, considering the wealth and intelligence of many of the southern people.

Within the past year, we have received several private letters of similar tenor, regarding the want of several large nursery establishments at the south, conducted in a thorough and vigorous manner. Undoubtedly there are thousands of persons there who would buy and plant the finest fruit and ornamental trees, if they were more acquainted with their value and beauty; and this kind of knowledge is in no way better promoted, than by the presence of extensive nurseries in their midst. As we have no interest in any nursery establishments here, we trust some of our readers who are, and who may be inclined to enter into Mr. Fish's views, will correspond with him on the subject.—Ed.

A. J. DOWNING, ESQ.—*Dear Sir*:—Being a great friend and ardent admirer of horticulture in general, I have read your works upon the "Fruits and Fruit Trees of America," and "Rural Architecture and Landscape Gardening," with the highest interest and pleasure. I am happy in the conviction that the lethargy which has so long possessed us of the south, in these matters, is now being thrown off. A spirit of improvement is rapidly gaining ground in our midst, and horticulture and all its kindred arts, so long neglected, are beginning to receive that consideration which they so justly deserve. Suffer me to say, sir, that such works as yours, of which I have just spoken, have done more to arouse this spirit, to excite this consideration, than all other influences together. Believing this, and at the same time, being deeply impressed with the great influence which Horticulture and its kindred arts and graces, must exercise in increasing the happiness as well as prosperity of man, I cannot withhold my humble tribute of thanks for the publication of your highly valuable books. Although a stranger, I have been anxious to add my humble testimony to the high consideration and attention which these works are now receiving even at the south; and to the happy reformation which they are mainly instrumental in working, in a part of our great country, which till recently had greatly neglected the interesting subjects of which they so fully and ably treat.

However, I do not know, sir, that I should have intruded this communication upon you, but from the desire to speak of one other matter, and, if possible, to solicit your aid. I have mentioned the spirit of improvement—the great interest in Horticulture, &c., which you have mainly aided to excite; but this spirit—this interest, receives a great check from the fact that there are no extensive Nurseries

and commercial gardens at the south, or at least accessible to us from which we can procure such Fruits, Flowers, Shrubbery, &c., as may be desired. This is unquestionably felt as a sore inconvenience. Many at the south are deterred from sending to the north for their things, because the cost of transportation, and other expenses connected therewith, especially when the orders are not large, would be very considerable. Besides, there is a danger of being imposed upon by nurserymen and gardeners, where orders are sent to them to be filled—and again, there is great danger that the precious package of good things, being long on the way, may be received in a very unsound condition. I am well aware, our people are generally much averse to sending orders for fruits, flowers, &c., and would invariably patronise home gardens and nurseries if we had them here. It is truly strange to me, sir, that some of your enterprising nurserymen or gardeners, at the north, have not long since come to the south and established gardens and nurseries, or that some of your establishments, north, have not got up branch nurseries here. This is a matter of which I have thought not a little, and I am anxious to see an extensive garden and nursery in Georgia; and I would suggest Macon, the place of my residence, as possessing altogether more advantages in this respect than any other city or town in the State. It is therefore for the establishment at this place of an extensive nursery, &c., that I would respectfully solicit your aid and influence, if you could in any way give it without inconvenience or trouble to yourself. It is needless for me to say that such an establishment at a central, accessible place at the south, would give a great impetus to Horticulture, &c. I suggest Macon as a highly advantageous location for a garden, nursery, &c., because we have here a genial climate, and almost every variety of soil. Any kind of soil or situation can be had in our suburbs, and at very low prices. Macon is also a very central place at the south, and very accessible. We have long lines of railroads running in various directions, and other lines still to be constructed; besides we have a river navigable for six or eight months of the year. These railroads make us, and will make us, very accessible to every part of Georgia, North and South Carolina, Tennessee, Kentucky, Alabama, Mississippi, and Florida. Fruit trees, flowers, shrubbery, &c., could and would be sent, not only to the cities, but to every part of the State.

It may be urged that nurseries and gardens should be near large cities. It is true, we have but a population of about 7,000 in Macon, but we have a good deal of wealth here, and the demand for fruits, flowers, &c., would be considerable. But communicating as we do, with every part of the Southern country, and having a direct trade with a large part (and the wealthiest part) of Georgia, the great demand would come from these various parts and sections of the South.

It would require but little capital, very little, to establish a nursery, &c. here, as the ground would cost but little; and if the nurseryman did not wish to purchase, he could find numbers, as owners of the soil, who would be glad to furnish the land, and put it in as stock, in an establishment of the kind.

So convinced am I of the success of a nursery here, that I would most gladly render to *any experienced and competent person* any aid in my power. There is not the least doubt that an experienced and honest commercial gardener would meet with the highest success to engage in his business among us. I have mentioned some of the advantages; we are also connected with Savannah, Charleston, and other cities of the South. I will mention the fact (which is of course known to you) that all the varieties of fruits succeed very well at the South generally. Though some sorts do better in some parts of our country than in others. I will also remark that on account of our southern climate, vegetation grows so rapidly that the nurseryman would be rewarded for his labor in grafting, budding, &c., in half the time that is required at the North. Trees grafted and budded, would be large enough for market the second year, and many even the first year.

I have taken the liberty to trouble you with this long communication, as I know you are deeply interested in these matters. You may not now be connected with a nursery, (I learn that you are not,) but will you do me the favor, sir, to hand this communication to some one who might be induced to come South, or to make such disposition of it, as might best secure the object I desire; that is, the establishment of a nursery at Macon. Perhaps some of the many establishments of the kind at the North, might be influenced to start a branch of their business here.

I would be most happy to correspond with any one, seeking further information on this subject. Should any person desire to know the precise nature of the different kinds of soil, or the price of land, or any other facts, I will cheerfully communicate this, or any other information.

As erroneous opinions often prevail at the North, with regard to the health of the South; I would here take occasion to say, that Macon is remarkable for health. They need not fear fevers, or any other Southern diseases here.

In conclusion, I beg to say, that I have made this communication much longer than was intended. Nothing but an ardent desire to see Horticulture more prosperous at the South, would have induced me to pen it. And knowing that there was no gentlemen in our whole Union who felt a greater interest in these matters, or who could take a more intelligent view of the suggestions I here offer, than yourself, I have concluded, though a stranger, to intrude this upon your patience.

If, sir, you can give any direction to this, which may further the objects of the writer, you will certainly confer a lasting favor upon your obedient servant, GEO. W. FISH. *Macon, Geo., Sept. 10, 1847.*

NEW-YORK HORTICULTURAL EXHIBITION.—We were present at the show of the American Agricultural Association in Broadway on the 8th of September. The exhibition was a very respectable one for a Society yet in its infancy, compared with those of Philadelphia and Boston; but it has not as yet by any means gathered all the horticultural strength of the metropolis and its surroundings.

Among the articles more especially worthy of

notice, were the unrivalled Newtown pippins of Pelham farm; the Dahlias of DUNLAP & CARMAN; the Roses of BOLL & MANTEL; the charming *basket bouquets* of S. T. JONES; and some exceedingly beautiful and large specimens of Donyer's Victoria Plum, raised under glass, from Mr. HALSEY, of Astoria. The collection of fruits was not large; but the vinery grapes, from various contributors, were exceedingly good specimens. We have not been furnished with a report by the recording secretary in time for this number, but will notice it in our next.

NEW-YORK STATE AG. SOCIETY.—*Horticultural Department.*—The preparations for the Horticultural exhibition at Saratoga, were superior, beautiful as they have heretofore been, to those of any former Fair, and reflected high credit upon the good taste of Dr. THOMPSON, under whose direction the erections were made. The exhibition, except perhaps in Flowers, was not equal to some previous ones. Expecting to have received the report of the committees, we did not take the notes necessary to enable us to do justice to the contributors, and must therefore refer to these reports, which we shall publish next month.

THE ROCKINGHAM HORT. SOCIETY held its first exhibition at Portsmouth, N. H., on the 15th September. Though this Society had been but a fortnight in existence, the show was large, and gave evidence of far more attention to Horticulture in that vicinity than had been supposed to exist. The show of Fruits was particularly fine. In the evening an address was delivered by Rev. Dr. BURGESS, which is spoken of in the highest terms.

UTICA HORTICULTURAL EXHIBITION.—This exhibition took place on the 7th Sept. at Mechanic's Hall. The report of the committee on vegetables notices with great satisfaction the growing interest manifested in this department of Horticulture, as evinced by the fine display of vegetables at the exhibition. In the discharge of the special duty assigned them, they reported, and the Society awarded, various premiums on Fruit, Vegetables and Flowers. Premiums were awarded on Plums to Messrs. J. R. Warner and C. S. Wilson; Pears, J. C. Hastings, of Clinton; Apples, T. H. Hubbard; Peaches, Mrs. Cyrus Clark; Melons, C. E. Goodrich; Grapes, S. D. Childs; also for Peaches, to Messrs. A. Munson, L. Lawrence, J. Vanderheyden, and W. Mervin; Apples, W. D. Walcott, Yorkville; and Plums, N. Devereaux. To Charles Spratt, on Egg Plants and Sweet Corn. To the Lunatic Asylum, on Lima Beans; W. A. Richardson, on Tomatoes; Richard Harter, on Potatoes; and Charles Spratt and George S. Dana, on the best lot of Vegetables. For Flowers, premiums were awarded to Mrs. Anson Thomas, Mrs. S. D. Childs, F. W. Boice, Mrs. W. Tracy, Mrs. W. D. Walcott, C. D. Balis, and Mr. Howard. We do not undertake to condense the comments of the report, upon the several varieties. It is perhaps enough to say that where all deserved so well, the committee, in discriminating, have praised, and doubtless justly praised, the whole. In conclusion we would remark that these exhibitions attract

great interest, and are certainly advancing the Horticultural prospects of this part of the State. *Utica Observer*.

EXHIBITION OF THE HORTICULTURAL SOCIETY OF MONTREAL.—The first annual exhibition of this Society took place on the 7th of September. The *Montreal Gazette* speaks of it as a "splendid exhibition, which in some points would have been creditable to any of the older established societies of either England or America." This is certainly gratifying information to receive in regard to the condition of Horticulture in a region which many

look upon as too cold and ungenial for the successful culture of fruits. Premiums were awarded for Plums, Peaches, Pears, Grapes, grown both under glass and in open culture; Melons of the Minorca, Cantaloupe, and other varieties; also for many kinds of flowers, bouquets, and many floral designs. There appears to have been an excellent show of vegetables, including nearly all of the usual culinary kinds, as well as the new and rarer sorts. Premiums were also given on birds, including pigeons, canaries, &c., of which there was a large display.

ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.

THE first annual exhibition of this Society took place on the 11th of September, at the State Geological Rooms, State-street, Albany, and was every thing that its most ardent friends could wish.

It is not yet six months since the Society was formed; and of course no opportunity has been afforded for increasing the varieties, or extending the cultivation of the various articles exhibited, and yet the show of fruit, flowers, and vegetables, astonished and delighted every beholder. A more beautiful, a more extensive horticultural exhibition has seldom or ever been witnessed in this State.

The undersigned congratulates the friends and supporters of the Society upon the entire success of this first annual exhibition; and trusts, that this encouraging and satisfactory result will induce them to farther and continued exertions, for the prosperity and welfare of the Society.

JOEL RATHBONE, *President*.

FRUITS.—The committee on Fruits report that there were exhibited by R. H. Vail of Ida Farm, Troy, eleven varieties of *Apples*, viz., Holland Pippin, Early Tart Bough, Heart's Pippin, Jersey Sweeting, Early Sweet Bough, Spitzenbergh, R. I. Greening, Domine, Vandervere, Swaar, and one variety not named. Three varieties of *Pears*—Bartlett, Beurre Rans, and Catillac. Seven varieties of *Plums*—Coe's Golden Drop, Flushing Gage, Reine Claude, Yellow Egg, Imperial Gage, Yellow Gage, and a seedling of a fair character. One variety of *Peach*—Red Magdalen. Three varieties of *Grapes*—Isabella, Winne, and a native blue variety.

By D. Benson of Albany: *Pears*—Beurre Diel, *Plums*—Washington Bolmar, Royal Purple and Nectarine; and a very fine seedling *Peach*.

By Wm. Newcomb: *Watermelons*—three varieties. *Musk melons*—three varieties.

By E. P. Prentice, Mount Hope, Albany: *Peaches*—very beautiful specimens of Bergen Yellow. *Musk and Water Melons*—one variety of each.

By John Gott, Albany: *Peaches*—a limb bearing thirty beautiful peaches not named. *Plums*—Green Gage, and a seedling.

By Stephen E. Warren, Troy: Seven varieties of *Peaches*—Noblesse, Royal George, Patron, Sweetwater, Lemon Cling, Red Magdalen, and a seedling. Three varieties of *Nectarines*—Perkins' Seedling, Red Roman, and one not labelled.

By Bradford R. Wood, Albany: Five varieties of *Plums*—Red Magnum Bonum, Sweet Gage, Green Gage, Washington, and Bolmar. *Peaches*—beautiful Rareripe.

By Wm. Buswell, Troy: *Peaches*—Coolidge's Favorite. *Plums*—Washington, and a Seedling.

By D. B. Kirtland: *Apples*—Hawthornden. *Musk Melons*—Netted.

By J. Mc D. McIntyre, Albany: *Plums*—Egg. *Apples*—one variety not named.

By Dr. Jas. McNaughton, Albany: *Peaches*—Rareripe and Morris White, very fine.

By V. P. Douw, Greenbush: *Pears*—Beurre Diel. *Plums*—Royal Blue, a seedling Green, and a seedling Yellow *Grapes*—Miller's Burgundy. *Water Melons*—Black Spanish, Joppa, Rio Janeiro and Mountain Spanish. *Musk Melons*—Netted.

By Joel Rathbone, Kenwood, Albany county: *Plums*—

Green Gage, and Blue Gage. *Peaches*—Royal George, Sweetwater and Morris White. *Pears*—Seckel. *Grapes*—Catawba and Isabella. *Nectarines*—Newington. *Water Melons*—Rock Nutmeg, and Large Long Island.

By Isaac Denison, Albany: Twenty-seven varieties of *Plums*—Bleecker Gage, Yellow Gage, Denison's Superb, Reine Claude, Columbia, Albany Beauty, Eleanor, Yellow Egg, Lawrence's Favorite, Chancellor Gage, Denison's Red, Bleecker's Red. Blue Gage, Buel's Favorite, Green Gage, Washington Bolmar, Mirabelle, and ten seedlings not named.

By Amos Briggs, Scaghticoke, Rensselaer county: Sixteen varieties of *Plums*—Nectarine, Orange, Orleans, Prince's Yellow Gage, Reine Claude, Coe's Golden Drop, Blue Gage, French Red Gage, Imperial Gage, Washington Bolmar, Yellow Gage, Purple Magnum Bonum, and four seedlings of fine appearance, but not of first quality. *Pears*—Bartlett, Seckel, and one variety not named. *Apples*—one variety not labelled.

By Jas. Wilson, Albany: Six varieties of *Pears*—Althorpe Crassanne, Doyenne Gris, Doyenne White, Beurre Capiaumont, Henry the Fourth and Lewis. *Apples*—Reinette Van Mons. *Plums*—Bleecker's Red, St. Catharine, Wheat and Judson. *Currants*—May's Victoria.

By John Taylor, Albany: *Apples*—two varieties not labelled. *Grapes*—Sweetwater and French Cluster.

By James Coates: *Plums*—Red Magnum Bonum, and Quackenbush. *Apples*—Alexander. *Water Melons*—two varieties.

By L. Menand: *Strawberries*—White Alpine.

By J. K. Paige, Albany: Six varieties of *Pears*—Seckel, Bartlett, and four varieties not named. *Peaches*—five varieties. *Grapes*—sixteen varieties. *Plums*—thirteen varieties. *Water Melons*—Valparaiso.

By Dr. A. March, Albany: *Plums*—Very beautiful specimens of Red Magnum Bonum and Yellow Egg.

By Dr. Herman Wendell, Albany: Nineteen varieties of *Pears*—Duchess d'Angouleme, Seckel, Gansel's Beigamot, Napoleon, Beurre Knox, Muscadine, Easter Beurre, Beurre Diel, Bartlett, Doyenne White, Leon le Clerc of Van Mons, Comte de Lamy, Fulton, Summer St. Germain, Chaumontelle, Duchess de Mars, and three varieties unnamed. Twenty varieties of *Apples*—Newtown Pippin, Green, Rambo, Baldwin, Esopus Spitzenbergh, Yellow Newtown Pippin, Male Carle, Lady Apple, Gloria Mundi or Ox Apple, Gravenstein, Lemon Pippin, Golden Sweet, Fall Pippin, Vandervere, Rhode Island Greening, Hawthornden, Ribston Pippin, Seek-no-further, Siberian Crab, and two varieties not named.

Twenty-five varieties of *Plums*—Coe's Golden Drop, Coe's Late Red, Yellow Egg, Red Magnum Bonum, White Perdigon, Virgin, Peters' Large Yellow, Prune d'Agén, White Magnum Bonum, Lombard, or Bleecker's Red, Long Seckel, Catherine Plum, American Wheat Plum, Bleecker's Gage, Schuyler's Gage, Washington Bolmar, Yellow Gage, Blue Gage, Nectarine, Reine Claude, Prince's Imperial Gage, Holland Plum, two English varieties, labels lost, and one seedling from the Lombard, resembling that variety. *Grapes*—Golden Chasselas, Bland's Virginia and Isabella. *Nectarines*—Red Roman. Six varieties of *Peaches*—Early Anne, Early Tillotson, Emperor of Russia, and three seedlings. *Water Melons*—Black Spanish and Valparaiso. *Musk Melons*—Beechwood, Sweet Isaphan, Christiana, Green Citron, and early yellow Canteloup.

By J. Townsend, Albany: *Apples*—five varieties not named.

AWARD OF PREMIUMS.

The Committee have awarded the premiums as follows:

Apples—For the best exhibition, to Dr. Herman Wendell of Albany, \$3.

For the second best exhibition, to Henry Vail, of Ida Farm, Troy, \$2.

Pears—For the best exhibition, to Dr. Herman Wendell of Albany, \$3.

For the second best exhibition, to James Wilson of Albany, \$2.

Plums—For the best exhibition, to Isaac Deniston, of Albany, \$3.

For the second best exhibition, to Dr. Herman Wendell, of Albany, \$2.

Peaches—For the best exhibition to Stephen E. Warren, of Troy, \$3.

For the second best exhibition, to John Keyes Paige, of Albany, \$2.

Grapes—For the best exhibition of native grapes, to Henry Vail, of Troy, \$3.

For the best specimens and greatest variety of foreign grapes, to John K. Paige, of Albany, \$3.

Nectarines—For the best exhibition, to Stephen E. Warren, of Troy, \$3.

Water Melons—For the best specimens, to V. P. Douw, of Greenbush, \$2.

For the second best specimens, to Joel Rathbone, of Kenwood, Albany, \$1.

Musk Melons—For the best specimens, to Dr. Herman Wendell, of Albany, \$2.

For the second best specimens, to V. P. Douw of Greenbush, \$1.

The Committee beg leave to notice favorably, and as the best specimens of the particular varieties named, some Coe's Golden Drop and Nectarine Plums, exhibited by Mr. Amos Briggs of Schaghticoke; and some very large and beautiful Bergen Yellow Peaches, exhibited by E. P. Prentice of Mt Hope, Albany county; also a few beautiful specimens of Apples, Peaches, Plums, and a very beautiful new seedling Pear, called the Sterling Pear, exhibited by Messrs. Wilson, Thorburn and Teller, from their nursery.

V. P. DOUW, Greenbush, WM. BUSWELL TROY,
DAVID BENSON, Albany, *Committee*.

FLORAL DESIGNS, VASE BOUQUETS, &c.—The Committee on Floral Designs, Bouquets, &c., report that there were presented for exhibition more than twenty designs, bouquets, etc., nearly all of which were very beautiful, and reflected great credit for skill and taste on the part of the exhibitors.

Mr. Dingwall of Watervliet, exhibited a beautiful design in candelabrum form, five feet high, composed of choice and rare flowers, surmounted with a very elegant bouquet of green-house flowers, to which the Committee awarded the first premium of \$3.

Mr. Henry Vail, of Troy, exhibited an elegantly arranged design, three feet high, of antique form, composed of choice flowers, to which they have awarded the second premium of \$2.

Mr. Joel Rathbone, of Kenwood, exhibited a beautiful Egyptian design, four feet high, composed of choice Dahlias, Roses, Verbenas, and other flowers, arranged with great skill and good taste.

Mrs. D. T. Vail, of Ida Farm, exhibited a design in pyramidal form, composed of beautiful flowers, with a cypress vine gracefully twined around its base, and arranged with exquisite taste throughout.

Mrs. Charles H. Merritt, of Troy, exhibited a floral temple, its columns and entablature covered with green moss, its base studded with delicate flowers on a moss ground, and the apex of its roof surmounted by a beautifully arranged bouquet of rare flowers.

Dr. Herman Wendell exhibited, not for competition, a design in pyramidal form, four feet high, composed of choice flowers of numerous varieties.

L. Menand exhibited a very splendid oval shaped floral ornament for a dinner table, arranged in a china basket with great taste and skill, composed of the choicest and rarest green-house flowers, such as Stephanous floribundus, Ericas, Crassulas, Drosinas, Fuchsias, Heliotropes, Geraniums, etc., to which the Committee awarded a premium of \$3.

Mr. Dingwall exhibited a pair of beautifully arranged vase bouquets, composed of choice flowers, to which the premium is awarded of \$3.

Mr. Wilson exhibited a pair of vase bouquets arranged with taste and skill.

Mr. Wilson exhibited a pair of flat mantel bouquets, arranged tastefully with choice flowers, to which the premium is awarded of \$2.

Mrs. Charles H. Merritt, exhibited a basket bouquet, most beautifully arranged with rare flowers, its body and handle covered with moss, studded with rare and delicate flowers, to which the premium is awarded of \$2.

Mrs. Merritt also exhibited a beautiful basket bouquet, without a handle, arranged with skill and taste.

Mr. Wilson, an exquisitely designed pair of bouquets, one flat and one round, composed of the choicest and rarest flowers, and arranged with consummate skill, to which the first premium is awarded of \$2.

Mr. Menand also presented a beautifully arranged pair, designed with his usual pure taste and great skill, to which the second premium is awarded of \$1.

HERMAN WENDELL, ABEL FRENCH,
WM. NEWCOMB, *Committee*.

GREEN-HOUSE PLANTS AND FLOWERS.—The Committee on Green-house Plants and Flowers, report that there was exhibited by L. Menand the following named green-house plants in pots—all of very beautiful appearance, and indicating great skill in their culture, viz:—*Ericas*: multiflora, transparent, clarida, umbellata, gracilis, cruenta, and phycoides; *Rochea falcata*, and *Physianthus alt*.

By James Wilson—Seventy varieties of Dahlias for the display premium, twelve varieties for the 12 dissimilar bloom premiums, and one variety for the specimen bloom premium; six varieties of Noisette Roses, ten varieties of Perpetual Roses, fifteen varieties of Bourbon Roses, twenty-four varieties of Verbenas, several Seedling Verbenas, splendid double German Asters and Seedling Phloxes. Mr. W. not having handed in a list of the names of his flowers, the committee cannot report them, under the rule, more in extenso.

By Dr. Herman Wendell—Twenty-two varieties of Dahlias, viz:—Admiral Stoford, Orb, Sylph, Striata, Lees' Bloomsbury, Cleopatra, Arethusa, Oakley's Surprise, Madam Walmer, Pontiac, Oddity, Duke of York, La Tour D'Auvergne, Madame Chauverii, Nigra et Alba, Sir Stuart Richardson, Harlequin, Bragg's Antagonist, Viscount Resigneur, Dowager Lady Cooper, and Illuminator. Twenty-five varieties of Verbenas, including six seedlings; also, Lusette, Polka, Eclipse, Caroline, Dove-eye, Roseum, Rosy-cluster, Monk's Purple, Dwarf White, and others of newer varieties. Eighteen varieties of new and beautiful Phloxes, most of them never exhibited before this society, viz:—Charles, Rosea superba, Nymphaea alba, Auguste, Grandissima nova, Princess Marianne, Decussata alba, Mazeppa, Fleur de Marie, Almerine, Breckin, Lawrenci, Eclipse, Dodonea, Anais Chauviere, Norfolkii, and two Seedlings. Eight varieties of Roses, viz:—Dr. Rogers, Hermosa, Gen'l. Dubourgh, Madam Laffay, Prince Albert, Old Tea, Calvertia, and LaReine. Also a beautiful collection of Phlox Drummondii, arranged on a ground of Rose Geranium.

By Henry Vail, of Troy—Twelve varieties of new and beautiful Dahlias. Mr. V. did not hand a list to committee.

By J. Dingwall—Thirty-four varieties of Verbenas, twenty-five varieties of choice and beautiful Dahlias, a large collection of beautiful German Asters, tastefully arranged in a tray, and twenty-five varieties of Seedling Verbenas, several of which were very fine. Mr. D. has not rendered a complete list to the society.

By Wm. Newcomb, of Pittstown—Seventy-three varieties of Dahlias, viz:—Cinderella, Golden Souvenir, Lutea Speciosa, Arethusa, Ihariel, Great Mogul, Illuminator, Standard of Perfection, Hero of Stonehenge, Antler, Marchioness of Ormond, Sir Stuart Richardson, Eugenia, Mark Antony, Alice Hawthorne, Duke of York, Great Western, Desdemona, Beeswing, Cleopatra, Constantia, Theodore, Sir Henry Fletcher, Lord Lyndhurst, Viscount Resigneur, Favorite, Marshal Soult, Prince of Orange, Charles 12th, Harden's Bride, Bridesmaid, Lutea Grandiflora, Maroon, Argo, Exquisite, Essex, Triumph, Dowager Lady Cooper, Crowbridge's Perfection, Hero of Tippecanoe, McKensie's Perfection, Mrs. Wilkinson, L'Magnificent, Scarlet Perfection, Lord Liverpool, Rose Unique, Rose Superior, Striata, Mrs. Rushton, Mrs. Shelly, Unique, Admiral Stoford, Blandina, Indian Queen, Widnall's Queen, Miss Jones, Antagonist, Primrose, Alba Purpurea, Prince Albert, Mary, Conductor, Conservative, Sir R. Sale, Grandis, Julia, and Seedlings, Clarence, Mrs. Newcomb, William, Annette, Eliza, Simon, and President Polk. And the following varieties of annual and other

class flowers, viz :—Twelve varieties of Verbenas, Pink and White Musk Plant, Pink and White Lavatera, Feverfew, Schizanthus, several vases of Tagetes, Erysimum peroffskianum, twenty varieties of Zinnæa, variety Euphorbia, 4 varieties of Petunias, Phlox Drummondii, White and Gold Eternal Flower, Silenes in varieties, Reseda odorata, Delphinium, Double Balsams, Ageratum, Didiscus cerulea; Coreopsis, Scabious, Calceolarias, Cypress Vine, Escholzias, Portulaca, Lathyrus odorata, Tropeolum, Dolichos purpurea, Matthiola annua, Centaurea americana, Helianthus, 2 varieties, Anagallis indica, Mesembryanthemum chrysalinum, Coix laecharma, Hibiscus africanus, Glaucium luteum, Godetia, Globe amaranthus—two varieties—Adonis minata, Celosia cristata and lutea, Dianthus annuus, Clarkea, 2 varieties; Cornelia, Celsestris, Delphinium peren, Thymus pyramidalis, Lonicera, Southernwood, Snowberry, Mock Sensitive, and a very beautiful exhibition of Quilled and Double German Asters, arranged in good taste on a moss ground, in heart shape.

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PREMIUMS.—The committee have awarded the premiums as follows :

For the best exhibition of greenhouse plants to L. Menand of Watervliet.....	\$ 3 00
For the best exhibition of Dahlias to James Wilson of Albany.....	3 00
For the 12 best dissimilar blooms to James Wilson of Albany.....	2 00
For the 2d best 12 dissimilar blooms to Henry Vail of Troy.....	1 00
For the best six varieties of Roses to James Wilson.....	2 00
For the 2d best six varieties of Roses to Dr. Herman Wendell.....	1 00
For the best six varieties of Phloxes to Dr. Herman Wendell.....	2 00
For the 2d best six varieties of Phloxes to James Wilson.....	1 00
For the best seedling Phlox to James Wilson.....	1 00
For the best display of German Asters to Mr. Newcomb of Pittstown.....	2 00
For the 2d best display of German Asters to James Wilson.....	1 00
For the most extensive and best exhibition of Verbenas to J. Dingwall of Watervliet.....	2 00
For the 2d most extensive and best exhibition of Verbenas to James Wilson.....	1 00
For the best seedling Verbena, J. Dingwall.....	1 00
For 12 seedling Dahlias, discretionary premium to Mr. Newcomb.....	2 00
This being the time to award premiums for the season, the committee award for the best and most extensive exhibitions of Annual, Biennial and Perennial flowers during the season, to Mr. Newcomb.....	3 00
For the best and greatest display of Phloxes during the season to Dr. Herman Wendell.....	2 00

The committee beg leave to notice with commendation a large and beautiful exhibition of new and rare, as well as splendid, Dahlias sent to the exhibition by J. M. Thorburn & Co., New-York, for which they return the thanks of the society to Messrs. T. & Co.

WM. NEWCOMB, *Chairman*,
 JOSEPH CALDWELL,
 JOHN DINGWALL,
 WM. BUTTERCASE,
Committee.

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VEGETABLES.—The committee on vegetables report that there were exhibited by E. P. Prentice, of Mount Hope near Albany—Sweet Corn, Carrots, Parsnips, Beets, Salsify, Egg Plants, Red Cabbage, White Cabbage, Lima Beans, String Beans, six varieties of Tomatoes, four varieties of Rhu-

barb, Yellow Marrow Squashes, Summer Garden Crookneck Squashes, and Red Peppers.

By Joel Rathbone, of Kenwood near Albany—Dwarf Early York Cabbage, Drumhead Cabbage, Blood Beets, White Carrots, Yellow Altringham Carrots, Early Purple Carrots, Early Horn Carrots, Long Orange Carrots, Curled Savoy Cabbage, Egg Tomatoes, Yellow Tomatoes, small red and large red Tomatoes, Lima Beans, Dutch Marrow Peas, Okra, Case Knife Beans, Marrow Squash, White Manchester Solid Celery, Sugar Beets, Sage, Mint, Sweet Marjorum, Purple Egg Plants, Salsify, Parsnips, Sweet Corn and four varieties of Onions.

By J. Roeslie, of Albany—White Onions, Red Onions, Yellow Onions, White Strap Leaf Turnips, White, Black and Yellow Radishes, Bergen Cabbage, Sweet Winter Parsnips, Pot-herbs, Peach Tomatoes, Yellow Tomatoes, Red Tomatoes, Grape Tomatoes, Sweet Corn, and beautiful white large Giant Celery.

By John Townsend of Albany—Two varieties of Squashes, two varieties of Carrots, Corn, White Onions, Turnip Beets, Red Cabbage, and Nutmeg Squashes.

By Wm. Newcomb of Pittstown—Twelve Bassano Beets, Blood Beets, Sugar Beets, Salsify Roots, Blood Carrots, Altringham Carrots, White Spined Parsnips, Red, White and Silver Skin Onions, six clusters of Martinias, eight varieties of Squashes, viz : Summer Yellow, Summer Scallop, Valparaiso, Mammoth, Sugar Cro-kneck, Yellow Mammoth, and Acorn Squashes; Long Cucumbers, Sweet Corn, Ohio Corn, Pop Corn.

By Dr. Herman Wendell of Albany—Altringham Carrots, Red, White, and Yellow Onions, Parsnips, Nine varieties of Potatoes, viz : Onderdonk's Seedling, Long Pink Eye, Early June, Shaw's Early, Mercers, Carter's, Stafford Hall, Merinos, and Ross' Early; Turnip Beets, Blood Beets, Drumhead Cabbages, Martin's Crooknecked Squashes, Martinias and Seymour's White Solid Celery.

By V. P. Douw of Greenbush—Blood Beets, Orange Carrots, Parsnips, Red Tomatoes, Salsify, Brocoli, Marrow Squash, Celery, Drumhead Cabbage, Egg Plants, Butter Beans, Lima Beans, Refugee Beans, White Onions, and Asparagus Beans.

By Henry Vail of Troy—White Solid Celery, Salsify, Blood Beets, and four varieties of Egg Plants.

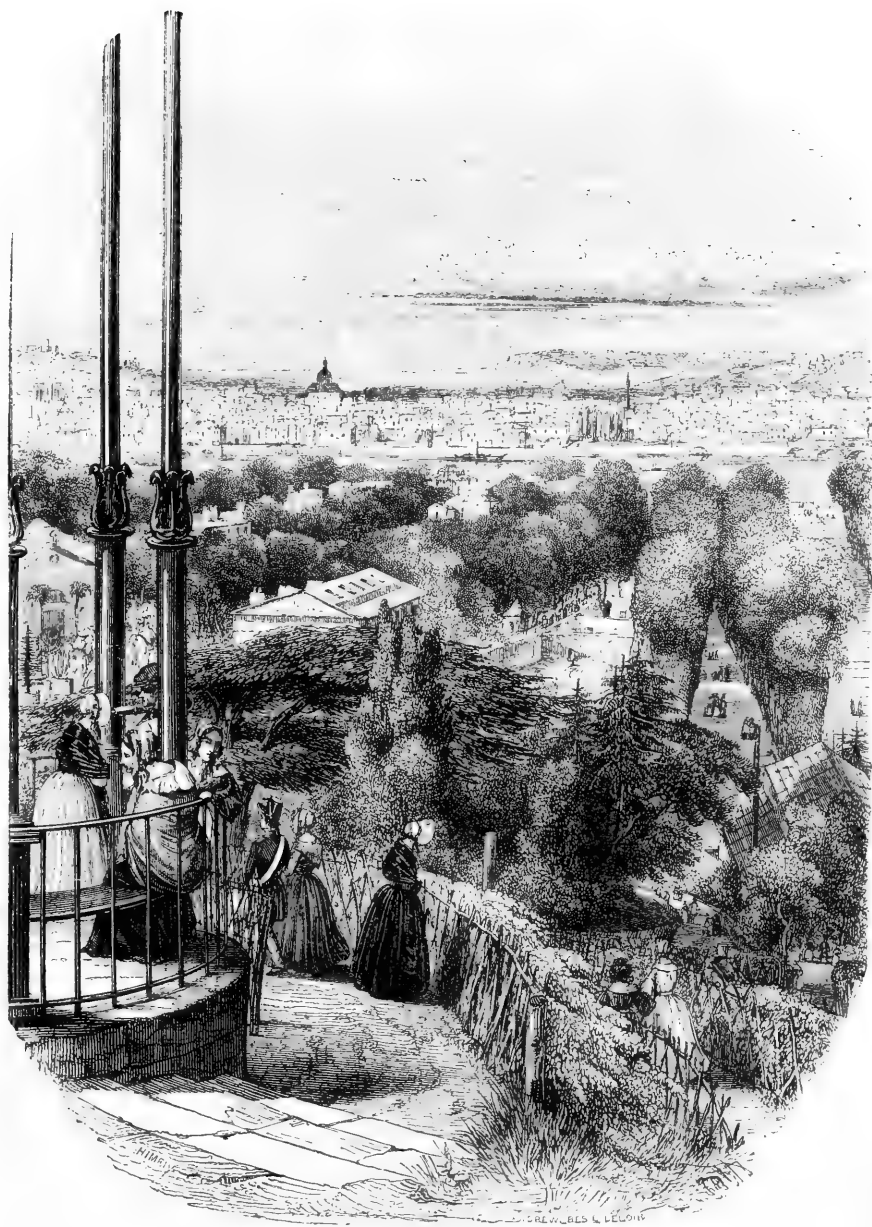
By Dr. Fairfield of Troy—Delusion Squash, kept since October, 1846.

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PREMIUMS.—The committee have awarded the premiums as follows :

For the best six Squashes, to E. P. Prentice, of Mount Hope.....	\$2 00
For the best 12 Blood Beets, to V. P. Douw, of Greenbush.....	2 00
For the best 12 Carrots, to Joel Rathbone, Kenwood, near Albany.....	2 00
For the best 12 Parsnips to E. P. Prentice.....	2 00
For the best 12 roots of Salsify, to Henry Vail, of Ida Farm, Troy.....	2 00
For the best pair of Egg Plants, to Joel Rathbone, ...	2 00
For the best 6 heads of Cabbage, to Herman Wendell, Albany.....	2 00
For the best 6 heads of Red Cabbage, to E. P. Prentice.....	2 00
For the best 3 heads of Brocoli, to V. P. Douw.....	2 00
For the best half peck of Tomatoes, to Joel Rathbone, ...	2 00
For the best 6 heads of Celery, to T. Roeslie, of Albany	2 00
For the best half dozen Martinias, to Wm. Newcomb, of Pittstown.....	2 00
For the best display of Vegetables, to E. P. Prentice.....	3 00

D. B. KIRTLAND,
 ROBERT HARPER,
 JOHN SLOANE,
Committee.

Albany, Sept, 11th, 1847.



VIEW OF THE JARDIN DES PLANTES.

[Hort: Nov. 1847.]

THE
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VOL. II.

NOVEMBER, 1847.

No. 5.

NOW THAT THE SEASON of the *present* is nearly over, now that spring with its freshness of promise, summer with its luxury of development, and autumn with its fulfilment of fruitfulness, have all laid their joys and benefits at our feet, we naturally pause for a moment to see what is to be done in the rural plans of the *future*.

THE PLANTING SEASON is at hand. Our correspondence with all parts of the country informs us, that at no previous time has the improvement of private grounds been so active as at present. New and tasteful residences are everywhere being built. New gardens are being laid out. New orchards of large extent are rapidly being planted. In short, the horticultural zeal of the country is not only awake—it is brimfull of energy and activity.

Private enterprise being thus in a fair way to take care of itself, we feel that the most obvious duty is to endeavor to arouse a corresponding spirit in certain rural improvements of a more public nature.

We therefore return again to a subject which we dwelt upon at some length last spring—the planting of shade trees in the streets of our rural towns and villages.

Pleasure and profit are certain, sooner or later, to awaken a large portion of our

countrymen to the advantages of improving their own private grounds. But we find that it is only under two conditions that many public improvements are carried on. The first, is when nearly the whole of the population enjoy the advantages of education, as in New-England. The second, is when a few of the more spirited and intelligent of the citizens move the rest by taking the burden in the beginning upon their own shoulders by setting the example themselves, and by most zealously urging all others to follow.

The villages of New-England, looking at their sylvan charms, are as beautiful as any in the world. Their architecture is simple and unpretending—often, indeed, meagre and unworthy of notice. The houses are surrounded by enclosures full of trees and shrubs, with space enough to afford comfort, and ornament enough to denote taste. But the main street of the village is an avenue of Elms, positively delightful to behold. Always wide, the over-arching boughs form an aisle more grand and beautiful than that of any old gothic cathedral. Not content, indeed, with one avenue, some of these villages have, in their wide, single street, three lines of trees, forming a double avenue, of which any grand old palace

abroad, might well be proud. Would that those of our readers, whose souls are callous to the charms of the lights and shadows that bedeck these bewitching rural towns and villages, would forthwith set out on a pilgrimage to such places as Northampton, Springfield, New-Haven, Pittsfield, Stockbridge, Woodbury, and the like.

When we contrast with these lovely resting places for the eye, embowered in avenues of Elms, gracefully drooping like fountains of falling water, or Sugar Maples swelling and towering up like finely formed antique vases—some of the uncared for towns and villages in our own state, we are almost forced to believe that the famous common schools of New-England teach the æsthetics of art, and that the beauty of shade trees is the care of especial professorships. Homer and Virgil, Cicero, Manlius, and Tully, shades of the great Greeks and Romans!—our citizens have named towns after you, but the places that bear your names scarcely hold leafy trees enough to renew the fading laurels round your heads!—while the direct descendants of stern Puritans, who had a holy horror of things ornamental, who cropped their hair, and made penalties for indulgences in fine linen, live in villages overshadowed by the very spirit of rural elegance!

It is neither from a want of means, or want of time, or any ignorance of what is essential to the beauty of body or of mind, that we see this neglect of the public becomingness. There are numbers of houses in all these villages, that boast their pianos, while the last Paris fashions are worn in the parlors, and the freshest periodical literature of both sides of the Atlantic fills the centre tables. But while the comfort and good looks of the individual are sufficiently cared for, the comfort and good looks of the town are sadly neglected. Our education here stops

short of New-England. We are slow to feel that the character of the inhabitants is always, in some degree, indicated by the appearance of the town. It is, unluckily, no one's especial business to ornament the streets. No one feels it a reproach to himself, that verdure and beauty do not hang like rich curtains, over the street in which he lives. And thus a whole village or town goes on from year to year, in a shameless state of public nudity and neglect, because no one feels it his particular duty to persuade his neighbors to join him in making the town in which he lives, a gem of rural beauty, instead of a sorry collection of uninteresting houses.

It is the frequent apology of intelligent persons who live in such places, and are more alive to this glaring defect than the majority, that it is impossible for them to do any thing alone, and their neighbors care nothing about it.

One of the finest refutations of this kind of delusion, exists in New-Haven. All over the Union, this town is known as the "City of Elms." The stranger always pauses, and bears tribute to the taste of its inhabitants, while he walks beneath the grateful shade of its lofty rows of trees. Yet a large part of the finest of these trees were planted, and the whole of the spirit which they have inspired, was awakened by one person—Mr. HILLHOUSE. He lived long enough to see fair and lofty aisles of verdure, where, before, were only rows of brick or wooden houses; and, we doubt not, he enjoyed a purer satisfaction, than many great conquerors who have died with the honors of capturing kingdoms, and demolishing a hundred cities.

Let no person, therefore, delay planting shade trees himself, or persuading his neighbors to do the same. Wherever a village contains half a dozen persons zealous in

this excellent work of adorning the country at large, let them form a society and make proselytes of those who are slow to be moved otherwise. A public spirited man in Boston does a great service to the community, and earns the thanks of his countrymen, by giving fifty thousand dollars to endow a professorship in a college; let the public spirited man of the more humble village in the interior, also establish his claim to public gratitude, by planting fifty trees annually, along its public streets, in quarters where there is the least ability or the least taste to be awakened in this way, or where the poverty of the houses most needs something to hide them, and give an aspect of shelter and beauty. Hundreds of public meetings are called, on subjects not half so important to the welfare of the place as this, whose object would be to direct the attention of all the householders to the nakedness of their estates, in the eyes of those who most love our country, and would see her rural towns and village homes made as attractive and pleasant as they are free and prosperous.

We pointed out, in a former article, the principle that should guide those who are about to select trees for streets of rural towns—that of choosing that tree which the soil of

the place will bring to the highest perfection. There are two trees, however, which are so eminently adapted to this purpose in the northern states, that they may be universally employed. These are the *American Weeping Elm* and the *Silver Maple*. They have, to recommend them, in the first place, great rapidity of growth; in the second place, the graceful forms which they assume; in the third place, abundance of fine foliage; and lastly, the capacity of adapting themselves to almost every soil where trees will thrive at all.

These two trees have broad and spreading heads, fit for wide streets and avenues. That fine tree, the *Dutch Elm*, of exceedingly rapid growth and thick dark-green foliage, makes a narrower and more upright head than our native sort, and, as well as the Sugar Maple may be planted in streets and avenues, where there is but little room for the expansion of wide spreading tops.

No town, where any of these trees are extensively planted, can be otherwise than agreeable to the eye, whatever may be its situation, or the style of its dwellings. To villages prettily built, they will give a character of positive beauty that will both add to the value of property, and increase the comfort and patriotism of the inhabitants.

PHYSIOLOGICAL EFFECTS OF SEVERE FROSTS ON TREES.

BY E. NICHOLS, WALHONDING, OHIO.

SIR—In volume 2, page 74, is the opinion of M. MORREN, and your comments dissenting from his aphorisms on this subject. He contends the injury thus done to trees is *chemical*; you suggest it is often *mechanical*, bursting the sap-vessels, etc. As to the form or mode of chemical action, by *elimination of the air on thawing*, as maintained

by M. MORREN, I give no opinion; but that the injury is *chemical* and not *mechanical*, in a majority of cases, seems to me highly probable. Your principal fact, the cold *rending the entire trunks of trees with a loud noise*, seems to me rather against than for your position, for this rending does not even injure the health of the tree; on the con-

trary, it grows over and the tree continues to prosper an indefinite period. Among fruit trees I have witnessed this particularly in a cherry tree, and every woodsmanknows it to be true of forest trees ; there being, in many situations, but few great oaks, which on being sawed or split, do not show frost cracks. Again the alburnum, chiefly the smaller branches and one year's shoots, suffer principally by freezing, where death is induced ; and these from their more porous, softer and tougher character, would bear mechanical distension much better than the harder and more brittle heart-wood, which rends with the report of a cannon, forcing, it is true, the thin covering of sap-wood on large trees. (a)

That the injury is chemical, seems to me apparent from the fact, as you have well observed, on frozen-sap blight, that the sap is always discoloured, where freezing produces vegetable death ; and in fact the whole substance of those parts of the tree injured, immediately on thawing, show this discoloration ; for example, if what we usually call the *roots* of a tree, (or what some botanists term underground branches,) are exposed to an atmosphere below the freezing point, it will be found that the extremities of the roots, taken from a considerable depth, will perish from the slightest freezing, while the upper portions, more used to cold and less porous, will remain uncolored and alive ; but if the freezing be increased, the roots perish to the neck of the tree, showing that the soft and porous parts, least likely to be injured by simple mechanical distention, is the first to yield up vegetable life to the frost.

Again, there is a striking resemblance in the frozen and destroyed sap, to the effect produced by freezing on several kinds of ink, dyes, etc., in which I presume no one will doubt the injury is chemical.

So too in the action of frost on the potato ; its juices are evidently chemically vitiated, not its substance mechanically destroyed ; for even when grated, the potato will retain its vitality for sometime in water, but loses it instantly on being frozen and thawed. Other vegetables, as the apple, and turnip and beet, will bear more frost, but intense freezing destroys most of them. Nor does this destruction seem to depend on the quantity of aqueous matter in the vegetable, liable to distention by the frost ; for the potato, the driest of the four vegetables named, yields its life to the least freezing ; and the beet less juicy than the turnip or apple, next ; and the turnip stands more than either. So it is with trees : one variety, equally succulent, will bear more frost than another ; as for example, the oak will withstand more than the pear, and the pear more than the tender exotic, which demonstrates that it is not the quantity of the water, but the definite composition of the sap of each kind, that renders it more or less liable to destruction by frost, and proves that the destruction is not of the woody vessels, which would readily yield to the mechanical power of frost in all, but to the chemical dissolution of the sap. (b) The sap loses its proper character, as does the ink, the dye, the potato, the beet ; and instead of nourishing the tree, poisons, and is as unfit for its use as is the potato, after freezing, for the use of man. Indeed, the part of the tree undergoing this change dies as suddenly as a man would, if the whole blood of his system were converted into hog-wash or swill.

But it will be asked, if it is not the expansion of water by freezing, that bursts the sap-vessels, why is it that it is always the trees that are growing and succulent, or the limbs that are in that condition, that are destroyed by frost ? It is only trees in a

growing state that are charged with the cambium or elaborated sap, containing the elements of a new layer or stratum of wood. So soon as this deposit is fairly made, the tree quickly ceases to grow, and the little sap in circulation contains comparatively little more than water. In the latter part of the month of June, I have seen the annual concentric layer deposited in due form, but yet in a soft, almost semi-fluid, state, adhering imperfectly to the old wood, and readily separated from both wood and bark. The work of after growth for the season, is to consolidate and perfect this layer. This done, the sap, highly charged with living woody matter, ceases to flow; and it is only this unconsolidated living matter that is highly susceptible to the chemical action of frost. Except its protection by the bark, it may well be supposed to be more tender and susceptible, than the most delicate expanded leaf of spring.

This theory of M. MORREN also makes the true cause of the summer blight of pear trees, more probable than any thing I have seen, by an easy transition. It is well known that on the living organism of plants and animals, heat and cold seem to produce very similar injuries. It is equally well known that the pear is a native of countries not subject to the extremes of heat or cold felt here. Suppose then the tree is rapidly growing, and its new alburnum is in the semi-fluid state of which I have spoken, and suppose one of our unusual hot days, or singularly cold nights, in either case, is it unreasonable to suppose, that chemical decomposition occurs in the charged sap, and death is induced? In the laboratory great changes are produced by a change of temperature, and it is reasonable the like occurs in the laboratory of nature. If something of this kind was not intended, I am not aware what Kenrick and

others have meant in referring blight to a *stroke of the sun*.

In the human system, we know chemical action often overpowers the vital action in the stomach, and the fermentation of decomposition prevents digestion. And reasoning from analogy, it may well be concluded, that when the tree is fully charged with cambium or vital sap, full of the elements of wood, and there comes an unusually cold night or hot day, or dry or wet time, or there happens to the tree any other accident, which weakens the vital action, chemical action will take place, and a rapid decomposition of the true sap ensue, rendering that which should have formed wood poison to the tree. It follows, therefore, that the way to prevent blight, is to keep the tree in good health, and as far as possible to prevent excesses of all kinds—especially excess in manure, and in moisture, and cultivation; and that regularity should be practised, and every operation well timed.

If a tree hitherto neglected, be powerfully manured at midsummer, and especially if it be trimmed at the same time, death may be expected. So of extra cultivation, commenced after midsummer. Some soils naturally produce great irregularities in the growth of trees. This I know to be the case with the rich limestone hills in the northeast part of Ohio, where pear tree blight is very common, and where it evidently often occurs in the summer, and frequently does not extend below the growth of the season. That it does originate in the summer, is clearly proved by the facts related by LEMUEL POWELL in No. 7 of the third volume of the Ohio Cultivator, at page 52. Mr. POWELL moved part of a lot of pear trees of the same age and condition, wintered alike, in the spring, from Jefferson county to Meigs county. Those removed

lived and flourished ; those unremoved died that summer of blight. This limestone soil on which the pear blights, so far as I have seen it examined, is fertile on the top, and a very close solid clay for some four feet under. This clay becomes so dry in the latter part of the season, that in many places it cracks, and makes fissures of from one-fourth to an inch wide. The cause of the blight seems to be, the moisture kept to the surface by the clay, induces rapid growth in the fore part of the season ; and when dry hot weather sets in, the upper fertile stratum dries, and suddenly withholds the proper nourishment ; or in the fall the moisture is retained, when early autumnal rains occur, and late growth is caused, and the frozen-sap blight follows. The remedy, I suppose, is to cut through the clay, and make a connection of friable soil with the under strata, which is generally porous, and from the great depth at which I have seen roots growing, I judge when once through the upper strata, roots flourish well ; but as I intend to have it tried at Loydsville the coming year, I may hereafter give a better opinion on the subject. E. NICHOLS.

Walhonding, Ohio, Sept. 1, 1847.

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REMARKS.—(a) Our correspondent mistakes our view. M. MORREN's first aphorism is, that no organ of plants is rent by the action of cold, except in a few rare cases, when the cavities of the cellular tissue yield to the effect of the dilatation of the liquid. Our remark was intended to call attention to the common and well

known instances of the rending of the trunks of trees in the northern states, the result, as we believe, of the expansion of sap vessels by freezing. We are very well aware that death does not usually ensue when this happens to perfectly *hardy* trees, but it does when the tree is rather tender.

(b) Why certain trees are hardy in their nature, and others tender, physiologists have as yet been able to give no explanation, other than a particular constitution adapted to the climate they naturally inhabit. A potato, which is a tropical root, retains this delicacy of constitution, and therefore freezes much more quickly than an apple or a beet, both of which are natives of cold climates, and have constitutional or vital capacity of resisting frost. The trunk of the mahogany tree is one of the firmest, closest, and least *sappy* known, yet this tree will not bear the least exposure to a northern winter, while the poplar and the willow, counted among the softest wooded trees, full of juices, will bear the winters even of the frigid zones.

The important fact that we intended to convey in the note referred to by our correspondent, is that of two given trees of the same species, only partially hardy, or which are liable to injury in winter, that which had thoroughly elaborated its juices by an early growth well matured, is, as experience has repeatedly proved, in a much better condition to resist the action of frost, than another which has made a late growth, and is more or less replete with watery fluid or crude sap.—ED.

VARIETIES OF PEARS.—T. RIVERS, of the celebrated Sawbridgeworth nursery, England, has about *nine hundred* varieties of the pear under trial. ROBERT MANNING, of

Salem, Massachusetts, had about *eight hundred*. Probably not forty of all these are fully first rate, or worthy of extensive cultivation.

THE DESTRUCTION AND REPRODUCTION OF AMERICAN FORESTS.

BY J. W. DAWSON, PICTOU, NOVA SCOTIA.*

THE changes produced by the agency of civilized man, in the condition of the earth's surface, and the numbers and distribution of its living inhabitants, though not of great importance when compared with those which result from the unceasing operation of natural causes, are interesting to the naturalist, as they illustrate the vicissitudes which many parts of the earth's surface have experienced in ancient times, the extent to which plants and animals can accommodate themselves to changes of circumstances, and the natural compensations which have been provided for the destruction or diminution of particular species. Inquiry into such changes is also of importance as a means of dispelling the mystery which frequently envelopes the succession of organized beings in circumstances of physical change; a mystery which has induced some naturalists to recur to the doctrine of spontaneous generation and the transmutation of species, for explanations of phenomena which if properly examined, would have been found to result from some of the most ordinary causes of the maintenance and distribution of animal and vegetable life.

In North America, and especially in those parts of it forming the United States and British Provinces, such changes have occurred with great rapidity, converting, in a few years, uninhabited forests into countries having the aspect of regions long inhabited by civilized men. The forests have been destroyed, their living inhabitants extirpated, or obliged to adopt new modes of life, new animals and plants introduced and naturalized; and indeed, a revolution effected in all the departments of organized nature, in the lapse of a single generation. To notice a few of these changes, with reference more especially to the destruction and partial reproduction of forests, is my present object. The facts which I propose to state have been collected principally in the province of Nova Scotia.

In their natural state, Nova Scotia and

the neighboring provinces were covered with dense woods, extending from the shores to the summits of the hills. These woods did not form detached groves, but constituted a nearly continuous sheet of foliage, the individual trees composing which were so closely placed as to prevent them from assuming full and rounded forms, and to oblige them to assume tall and slender shapes, that each might obtain air and light. The only exceptions to this are certain rich and usually light soils, where the forest is sometimes more open, and hills too rocky to support a covering of trees. When viewed from the summit of a hill, the forest presents a continuous undulating surface of a more or less dark colour and uneven form, in proportion to the prevalence of the deep colours and uneven outlines of the evergreen coniferæ, or of the lighter tints and rounded contours of the deciduous trees; and these two classes are usually arranged in belts or irregular patches, containing mixtures of trees corresponding to the fertility and dryness of the soil. In general the deciduous or hardwood trees prevail on intervale ground, fertile uplands, and the flanks and summits of slaty and trappean hills; while swamps, the less fertile and lightest upland soils, and granitic hills, are chiefly occupied by coniferous trees.

The forest trees spring from a bed of black vegetable mould, whose surface is rendered uneven by the little hillocks of earth and stones thrown up by windfalls; and which, though usually named *Cradle hills*, are in reality the graves of departed members of the forest, whose trunks have mouldered into the mossy soil. These cradle hills are most numerous in thin soils; and are chiefly produced by the coniferous trees, and especially by the hemlock spruce. There is usually little underwood in the original forest; mosses, lycopodia, ferns, and a few herbaceous flowering plants, however, flourish beneath the shade of the woods.

The woods perish by the axe and by fire,

* From the Edinburgh New Philosophical Journal.

either purposely applied for their destruction or accidental. Forest fires have not been confined to the period of European occupation. The traditions of the Indians tell of extensive ancient conflagrations; and it is believed that some of the aboriginal names of places in Nova Scotia originated in these events. In later times, however, fires have been more numerous and destructive. In clearing land, the trees when cut down are always burned, and, that this may be effected as completely as possible, the driest weather is frequently selected; although the fire then is much more likely to spread into the surrounding woods. It frequently happens that the woods contain large quantities of dry branches and tops of trees, left by cutters of timber and firewood, who rarely consider any part of the tree except the trunk worthy of their attention. Even without this preparation, however, the woods may, in dry weather, be easily inflamed; for although the trunks and foliage of growing trees are not very combustible, the mossy vegetable soil, much resembling peat, burns easily and rapidly. Upon this mossy soil depends, in a great measure, the propagation of fires, the only exception being when the burning of groves of the resinous coniferous trees is assisted by winds, causing the flame to stream through their tops more rapidly than it can pass along the ground. In such cases some of the grandest appearances ever shown by forest fires, occur. The fire, spreading for a time along the ground, suddenly rushes up the tall resinous trees with a loud crashing report, and streams far beyond their summits, in columns and streamers of lurid flame. It frequently happens, however, that in wet or swampy ground, where the fire cannot spread around their roots, even the resinous trees refuse to burn; and thus swampy tracts are comparatively secure from fire. In addition to the causes of the progress of fires above referred to, it is probable that at a certain state of the growth of the forests, when the trees have attained to great ages, and are beginning to decay, they are more readily destroyed by accidental conflagrations. In this condition the trees are often much moss grown, and have much dead and dry wood; and it is possible that we should regard

fires arising from natural or accidental causes, as the ordinary and natural agents for the removal of such worn-out forests.

Where circumstances are favorable to their progress, forest fires may extend over great areas. The great fire which occurred in 1825, in the neighborhood of the Miramichi river, in New-Brunswick, devastated a region one hundred miles in length and fifty miles in breadth. One hundred and sixty persons, and more than eight hundred cattle, besides innumerable wild animals, are said to have perished in this conflagration. In this case, a remarkably dry summer, a light soil easily affected by drought, and a forest composed of full-grown pine trees, concurred with other causes in producing a conflagration of unusual extent.

When the fire has passed through a portion of forest, if this consist principally of hardwood trees, they are usually merely scorched—to such a degree, however, as in most cases to cause their death; some trees, such as birches, probably from the more inflammable nature of their outer bark, being more easily killed than others. Where the woods consist of softwood or coniferous trees, the fire often leaves nothing but bare trunks and branches, or at most a little foliage, scorched to a rusty brown colour. In either case, a vast quantity of wood remains unconsumed, and soon becomes sufficiently dry to furnish food for a new conflagration; so that the same portion of forest is liable to be repeatedly burned, until it becomes a bare and desolate “barren,” with only a few charred and wasted trunks towering above the blackened surface. This has been the fate of large districts in Nova Scotia and the neighboring colonies; and as these burned tracts could not be immediately occupied for agricultural purposes, and are diminished in value by the loss of their timber, they have been left to the unaided efforts of nature to restore their original verdure. Before proceeding to consider more particularly the mode in which this restoration is effected, and the appearances by which it is accompanied, I may quote from an article in a colonial periodical, the views of Mr. Titus Smith, Secretary of the Board of Agriculture of Nova Scotia, on this subject. These views, as the results

of long and careful observation, are entitled to much respect.

"If an acre or two be cut down in the midst of a forest, and then neglected, it will soon be occupied by a growth similar to that which was cut down; but when all the timber, on tracts of great size, is killed by fires, except certain parts of swamps, a very different growth springs up; at first a great number of herbs and shrubs, which did not grow on the land when covered by living wood. The turfy coat, filled with the decaying fibres of the roots of the trees and plants of the forest, now all killed by the fire, becomes a kind of hot-bed, and seeds which had lain dormant for centuries, spring up and flourish in the mellow soil. On the most barren portions, the blueberry appears almost every where; great fields of red raspberries and fire-weed or French willow, spring up along the edges of the beech and hemlock land, and abundance of red-berried elder and wild red-cherry appear soon after; but in a few years, the raspberries and most of the herbage disappear, and are followed by a growth of fir, white and yellow birch, and poplar. When a succession of fires has occurred, small shrubs occupy the barren, the kalmia or sheep-poison being the most abundant; and, in the course of ten or twelve years form so much turf, that a thicket of small alder begins to grow, under the shelter of which fir, spruce, hachemetac (larch), and white birch spring up. When the ground is thoroughly shaded by a thicket twenty feet high, the species which originally occupied the ground begin to prevail, and suffocate the wood which sheltered it; and within sixty years, the land will generally be covered with a young growth of the same kind that it produced of old." Assuming the above statements to be a correct summary of the principal modes in which forests are reproduced, we may proceed to consider them more in detail.

1st. Where the wood is merely cut down and not burned, the same description of wood is immediately reproduced, and this may be easily accounted for. The soil contains abundance of the seeds of these trees, there are even numerous young plants ready to take the place of those which have been destroyed; and if the trees have been

cut in winter, their stumps produce young shoots. Even in cases of this kind, however, a number of shrubs and herbaceous plants, not formerly growing in the place, spring up; the cause of this may be more properly noticed when describing cases of another kind. This simplest mode of the destruction of a forest, may assume another aspect. If the original wood have been of kinds requiring a fertile soil, such as maple or beech, and if this wood be removed for example, for firewood, it may happen that the quantity of inorganic matter thus removed from the soil may incapacitate it, at least for a long time, from producing the same description of timber. In this case, some species requiring a less fertile soil may occupy the ground. For this reason, forests of beech growing on light soils, when removed for firewood, are sometimes succeeded by spruce and fir. I have observed instances of this kind, both in Nova Scotia and Prince Edward Island.

2dly. When the trees are burned, without the destruction of the whole of the vegetable soil, the woods are reproduced by a more complicated process, which may occupy a number of years. In its first stage, the burned ground bears a luxuriant crop of herbs and shrubs, which, if it be fertile and not of very great extent, may nearly cover its surface in the summer succeeding the fire. This first growth may comprise a considerable variety of species, which we may divide into three groups. The first of these consists of herbaceous plants, which have their roots so deeply buried in the soil as to escape the effects of the fire. Of this kind is a small species of *Trillium*, whose tubers are deeply imbedded in the black mould of the woods, and whose flowers may sometimes be seen thickly sprinkled over the black surface of woodland very recently burned. Some species of ferns, also in this way occasionally survive forest fires. A second group is composed of plants whose seeds are readily transported by the wind. Of this kind is the species of *Epilobium*, known in Nova Scotia as the fire-weed or French willow, whose feathered seeds are admirably adapted for flying to great distances, and which often covers large tracts of burned ground so completely, that its

purple flowers communicate their own colour to the whole surface, when viewed from a distance. This plant appears to prefer the less fertile soils, and the name of fire-weed has been given to it, in consequence of its occupying these when their wood has been destroyed by fire. Various species of *Solidago* and *Aster*, and other composite plants, and Ferns, *Lycopodia*, and Mosses, are also among the first occupants of burned ground, and their presence may be explained in the same way with that of *Epilobium*; their seeds and sporules being easily scattered over the surface of the barren by wind. A third group of species, found abundantly on burned ground, consists of plants bearing edible fruits. The seeds of these are scattered over the barren by birds which feed on the fruits, and finding a rich and congenial soil, soon bear abundantly, and attract more birds, bringing with them the seeds of other species. In this way, it sometimes happens that a patch of burned ground, only a few acres in extent, may, in a few years, contain specimens of nearly all the fruit-bearing shrubs and herbs indigenous in the country. Among the most common plants, which overspread the burned ground in this manner, are the raspberry, which, in good soils, is one of the first to make its appearance; two species of *Vaccinium*, called in Nova Scotia, blueberries; the tea-berry wintergreen (*Gaultheria procumbens*); the pigeon berry (*Cornus canadensis*); and the wild strawberry. It is not denied that some plants may be found in recently burned districts, whose presence may not be explicable on the above modes; but no person acquainted with the facts, can deny that all the plants which appear, in any considerable quantity, within a few years after the occurrence of a fire, may readily be included in the groups which have been mentioned. By the simple means which have been described, a clothing of vegetation is speedily furnished to the burned district; the unsightliness of its appearance is thus removed, abundant supplies of food are furnished to a great variety of animals, and the fertility of the soil is preserved, until a new forest has time to overspread it.

With the smaller plants that first cover

a burned district, great numbers of seedling trees spring up, and these, though for a few years not very conspicuous, eventually overtop, and, if numerous, suffocate the humbler vegetation. Many of these young trees are of the species which composed the original wood, but the majority are usually different from the former occupants of the soil. The original forest may have consisted of white or red pine; black, white or hemlock spruce; maple, beech, black or yellow birch, or other trees of large dimensions, and capable of attaining to a great age. The "second growth" which succeeds these, usually consists of poplar, white or poplar birch, wild cherry, balsam fir, scrub pine, alder, and other trees of small stature, and usually of rapid growth, which, in good soils, prepare the way for the larger forest trees, and occupy permanently, only the less fertile soils. A few examples will show the contrast which thus appears between the primeval forest, and that which succeeds it after a fire. Near the town of Pictou, woods chiefly consisting of beech, maple and hemlock, have been succeeded by white birch and firs. A small clearing in woods of maple and beech in New Annan, which, thirty years ago, was under cultivation, is now thickly covered with poplars thirty feet in height. In Prince Edward Island, fine hardwood forests have been succeeded by fir and spruce. The pine woods of Miramichi, destroyed by the great fire above referred to, have been followed by a second growth, principally composed of white birch, poplar, and wild cherry. When I visited this place, a few years since, the second growth had attained to nearly half the height of the dead trunks of the ancient pines, which were still standing in great numbers.

As already stated, the second growth almost always includes many trees similar to those which preceded it, and when the smaller trees have attained their full height, these and other trees capable of attaining a greater magnitude, overtop them and finally cause their death. The forest has then attained its last stage, that of perfect renovation. The cause of the last part of the process evidently is, that in an old forest, trees of the largest size and longest life have

a tendency to prevail, to the exclusion of others. For reasons which will be afterwards stated, this last stage is rarely attained by the burned forests, in countries beginning to be occupied by civilized man.

In accounting for the presence of the seeds necessary for the production of the second growth, we may refer to the same causes which supply the seeds of the smaller plants appearing immediately after the fire. The seeds of many forest trees, especially the poplar, the birch, and the firs and spruces are furnished with ample means for their conveyance through the air. The cottony pappus of the poplar seems especially to adapt it for this purpose. The seeds of the wild cherry, another species of frequent occurrence in woods of the second growth, are dispersed by birds which are fond of the fruit; the same remark applies to some other fruit-bearing species of less frequent occurrence. When the seeds that are dispersed in these ways fall in the growing woods, they cannot vegetate, but when they are deposited on the comparatively bare surface of a barren, they readily grow; and if the soil be suited to them, the young plants increase in size with great rapidity.

It is possible, however, that the seeds of the trees of the second growth may be already in the soil. It has been already stated, that deeply buried tubers sometimes escape the effects of fire, and, in the same manner, seeds imbedded in the vegetable mould, or buried in cradle hills, may retain their vitality, and being supplied by the ashes that cover the ground, with alkaline solutions well fitted to promote their vegetation, may spring up before a supply of seed could be furnished from any extraneous source. It is even probable that many of the old forests may already have passed through a rotation similar to that above detailed, and that the seeds deposited by former preparatory growths may retain their vitality, and be called into life by the favorable conditions existing after a fire. This is a point, however, requiring for its establishment a series of experiments which I have not yet been able to undertake.

If, as already suggested, forest fires in the uncultivated state of the country, be a provision for removing old and decayed

forests, then such changes as those above detailed, must have an important use in the economy of nature, since by their means different portions of the country would succeed each other in assuming the state of "barrens," producing an abundance of herbs and wild fruits suitable for the sustenance of animals which could not subsist in the old forests; and these gradually becoming wooded, would keep up a succession of young and vigorous forests.

3dly. The progress of restoration may be interrupted by successive fires. These are most likely to occur soon after the first burning, but may happen at any subsequent stage. The resources of nature are not, however, easily exhausted. When fires pass through young woods, some trees always escape; and so long as any vegetable soil remains, young plants continue to spring up, though not so plentifully as at first. Repeated fires, however, greatly impoverish the soil, since the most valuable part of the ashes is readily removed by rains, and the vegetable mould is entirely consumed. In this case, if the ground be not of great natural fertility, it becomes incapable of supporting a vigorous crop of young trees. It is then permanently occupied by shrubs and herbaceous plants; at least these remain in exclusive possession of the soil for a long period. In this state the burned ground is usually considered a permanent barren; a name which does not, however, well express its character, for though it may appear bleak and desolate when viewed from a distance, it is a perfect garden of flowering and fruit-bearing plants, and of beautiful mosses and lichens. There are few persons born in the American colonies, who cannot recall the memory of happy youthful days spent in gathering flowers and berries in the burnt barrens. Most of the plants already referred to as appearing soon after fires, continue to grow in these more permanent barrens. In addition to these, however, a great variety of other plants gradually appear, especially the *Kalmia angustifolia*; or sheep laurel, which often becomes the predominant plant over large tracts. Cattle straying into barrens deposit the seeds of cultivated plants, as the grasses and clovers, as well as many exotic weeds, which

often grow as luxuriantly as any of the native plants.

Lastly. When the ground is permanently occupied for agricultural purposes, the reproduction of the forest is of course entirely prevented. In this case, the greater number of the smaller plants found in the barrens disappear. Some species of the *Solidago* and *Aster*, and the Canada thistle, as well as a few smaller plants, remain in the fields, and sometimes become troublesome weeds. The most injurious weeds found in the cultivated ground, are not, however, native plants, but foreign species, which have been introduced with the cultivated grains and grasses; the ox-eyed daisy or white weed, and the crows-foot or buttercup, are two of the most abundant of these.

When a district has undergone the last change, when the sombre woods and the shade-loving plants that grow beneath them, have given place to open fields, clothed with cultivated plants, the metamorphosis which has taken place extends in its effects to the indigenous animals; and in this department, its effects are nearly as conspicuous and important as in relation to vegetation. Some wild animals are incapable of accommodating themselves to the change of circumstances; others at once adapt themselves to new modes of life, and increase greatly in numbers. It was before stated, that the barrens, when clothed with shrubs, young trees and herbaceous plants, were in a condition highly favorable to the support of wild animals; and perhaps there are few species which could not subsist more easily in a country at least partially in this state. For this reason, the transition of a country from the forest state to that of burned barrens, is temporarily favorable to many species, which disappear before the progress of cultivation; and this would be more evident than it is, if European colonization did not tend to produce a more destructive warfare against such species than could be carried on by the aborigines. The ruffed grouse, a truly woodland bird, becomes, when unmolested, more numerous on the margins of barrens and clearings, than in other parts of the woods. The hare multiplies exceedingly in young second growths of birch. The wild pigeon has its

favorite resort in the barrens during a great part of the summer. The moose and cariboo, in summer, find better supplies of food in second growth and barrens than in the old forests. The large quantities of decaying wood, left by fires and woodcutters, afford more abundant means of subsistence to the tribe of woodpeckers. Many of the fly-catchers, warblers, thrushes and sparrows, greatly prefer the barrens to most other places. Carnivorous birds and quadrupeds are found in such places in numbers proportioned to the supplies of food which they afford. The number of instances of this kind might be increased to a great extent if necessary; enough, has, however, been stated to illustrate the fact.

Nearly all the animals above noticed, and many others, disappear when the country becomes cultivated. There are, however, other species which increase in numbers, and at once adapt themselves to the new conditions introduced by man. The robin (*Turdus migratorius*) resorts to and derives its subsistence from the fields, and greatly multiplies, though much persecuted by sportsmen. The *Fringilla nivalis*, a summer bird in Nova Scotia, becomes very familiar, building in out-houses, and frequenting barns in search of food. The song sparrow and Savannah finch, swarm in the cultivated ground. The yellow-bird (*Sylvia æstiva*) becomes very familiar, often building in gardens. The golden-winged woodpecker resorts to the cultivated fields, picking grubs and worms from the ground. The cliff-swallow exchanges the faces of rocks for the eaves of barns and houses; and the barn and chimney-swallows are every where ready to avail themselves of the accommodation afforded by buildings. The acadian or little owl makes its abode in barns during winter. The bob-lincoln, the king-bird, the waxwing or cherry bird, and the humming bird, are among the species which profit by the progress of cultivation. The larger quadrupeds disappear, but the fox and ermine still prowls about the cultivated grounds, and the field-mouse (*Arvicola pennsylvanica*), which is very abundant in some parts of the woods, is equally so in the fields. Many insects are vastly increased in numbers, in conse-

quence of the clearing of the forests. Of this kind are the grasshoppers and locusts, which, in dry seasons, are very destructive to grass and grain; the frog-spittle insects (*Cercopis*), of which several species are found in the fields and gardens, and are very injurious to vegetation; and the lepidoptera, nearly the whole of which find greater abundance of food, and more favorable conditions in the burned barrens and cultivated fields, than in the growing woods. It may be remarked in general, that there is no animal, frequenting in Europe the cultivated grounds, and either beneficial or noxious to man, which has not, in the indigenous species of America, an exact representative, filling its place in the economy of nature, and often in a natural, historical point of view, closely related to it. This results from a general sameness of arrangement in the system of nature in the old and new world; and if studied in its details, would form a subject of great interest to the zoologist and physical geographer.

REMARKS ON GARDENING AS A SCIENCE.—No. 5.

BY DR. WM. W. VALK, FLUSHING, L. I.

HAVING adduced the authority of LIEBIG, to show that the humus of the soil is not taken up by the roots of plants *as nutriment*, and suggested to the gardener some of the means and experiments by which he may bring the accuracy of the theory to the test, we propose to dismiss the subject, and, at the same time, to lay aside and altogether repudiate the term *humus* as applied to the garden, leaving the agriculturist to retain it or not, at his pleasure. It matters little what is said or thought of a subject which the mind cannot understand; and as the horticulturist avails himself of substances little used on the farm, our remarks shall be confined to them exclusively.

What then is *manure*, and how does it operate on the produce of the garden? The questions are by no means easily answered, and they apply in a two-fold direction. Every one versed in general horticulture must be perfectly aware that the same soil, the same enrichment, (or "dress" of whatever kind it may be,) will operate very differently upon plants in the open ground, and when confined in pots. Take, for instance, that staple of the garden, virgin loam, and let us refer to the evidence, on this point, of Mr. JAMES MAIN in the *British Farmers' Magazine*, April 1841, p. 93. He says;

"Newly reclaimed lands, whether from old pasture, fallen woods, or commons, or fresh loam dug from pits, are all, for a few years, exceedingly productive, without assistance from manure or other treatment, save digging or ploughing. This virtue of maiden soil, be it what it may, is at last dissipated by repeated cropping; and then the land must be refreshed with a dressing of some kind of manure. I have never read or heard of any trial having been made by chemists to analyze maiden earth, with a view of ascertaining what that particular quality is that proves so exciting and beneficial to vegetation. Its effects are well known to all cultivators. Trenching and trench plowing are the ordinary means for gaining upon the surface an additional stratum of virgin earth; and the good effects which follow sooner or later, are sometimes attributed to the true cause, namely, the addition of new, untired earth, though, by others, it is said to be owing to the increased depth of the staple." The new stratum is undoubtedly the exciting agent, and elucidating his argument by agricultural data, Mr. MAIN then asks, "*What* is that property of maiden earth, which *when aerated* proves so exciting and nutritive to the roots of plants? It cannot be humus, that is decay-

ed vegetable matter, unless very ancient indeed, and deposited contemporaneously with the chalk formations ; for I have found it reposing on chalk in considerable masses, which seemed to have felt no disturbance since the deluge, and in situations where no enriching fluid could be received, and yet for the sustentation of plants, whether native or exotic, it is invaluable. It would be well, if by chemical analysis, any light could be thrown on the matter. Perhaps *it may be some simple body*, which can be artificially collected, and applied with less trouble and equal effect, as more ponderous materials."

If any of our readers can retrace the astonishing effects of a loam raised by the spade in trenching from a depth of nearly two feet, and which had evidently lain undisturbed for centuries, upon a crop of any of the cabbage tribe, he will be satisfied with the truth of Mr. MAIN's remarks.

On such a loam, yellow or brown-orange in colour, void of any traceable fibre, and to a demonstration free from a particle of any substance that could bear the name of manure, potatoes, cabbages, broccoli, and the like, will thrive with a rapidity, verdure and luxuriance, that nothing can excel. What then, we inquire, chemically, has been, and is the exciting agent ? Such a loam is composed chiefly of insoluble sand, of perhaps one-fourth of alumine, or the matter of pure clay, of oxide of iron, (the colouring material,) and generally of a small percentage of chalk (carbonate of lime.) Now any or all of these, however varying in their proportions, are little soluble in water ; but the loam so constituted, if LIEBIG's authority be proof, invariably contains a proportion of vegetable alkali, *potassa*, of which substance, wherever it be found in the vegetable organization, it is the sole source and parent. Here then, Mr.

MAIN's most valuable suggestion is realised ; for a body, though not absolutely simple, a chemical agent *is* discovered, which being extremely soluble, is most energetic and potential in its effects upon the vegetable fluids. We are, therefore, justified in concluding that to *potassa* may be ascribed those luxuriant results which are the subject of inquiry.

But such a loam, however invaluable to vegetable culture, producing that flavor and purity which can never be obtained from manure in any form, will not avail in pot culture ; it is altogether too binding and intractable. The principle, nevertheless, remains in full force, therefore the judicious gardener has recourse to the turf taken off the purest loam of a common or grass pasture ; this he lays up in mass, turns, incorporates, and finally uses with its fibrous remains. Hence he obtains the best soil in a form and temperament that will give freedom to the progress of the roots, and yet has not lost one particle of those salts which play so important a part in the economy of vegetation.

But does his soil become paler during a course of culture ? Does it in any way present signs of impoverishment ? Certainly not ; it acquires depth of tint, *it gains humus*, and, after a time, the colour is darkened by several shades, proving that *carbon* has been deposited—not abstracted. Yet new soil is soon required ; and again a prudent addition of fresh turf, and frequently assisted by the whitest sand, will renew the energy of vegetation, and, simultaneously, all the corresponding phenomena. We have now, though conscious of much ignorance of those wondrous causes which are ever varying their "ceaseless change," presented our readers with matter for deep reflection, and, we dare hope, for profitable inquiry and experiment.

The next great natural agent, to the consideration of which our remarks are naturally led, is *water*. In importance, perhaps, it ought to hold the precedence, though treated numerically as second to *earth*. Its composition and agency may induce others to arrive at the same conclusion. Few persons, in this age of reading, consider water as a simple element; every chemist knows it to be a compound, consisting of the two great elementary principles, *hydrogen* and *oxygen*, two parts of the first, one of the second, and both estimated by their volume or measure. But the question now arises, what are hydrogen and oxygen? The reply is simple, (yet expressive of ignorance :)—they are the constituent elements of that fluid which might be regarded as the first of created things—water.

The sublime experiments of Professor FARADAY have shown that this all impor-

tant fluid is the standard measure of electrical developments. His "*Experimental Researches into Electricity*" should be read with deep attention by all who would understand this most interesting subject. The electrical hypothesis of water, may now be regarded as clearly proved; consequently, it may be viewed as the grand agent of all terrestrial meteorology; as the depository and medium of that elementary fire or essence, which, through the primary agency of solar light, is the vital, stimulating principle of vegetable development and growth, and coincidentally, as the instrument by which all manuring substances are brought into a condition to furnish the liquid aliment that is absorbed by the roots of a plant, and which we term sap.

We shall continue this subject in the next number. W. M. W. VALK.

Flushing, L. I., Oct. 1847.

A SELECT LIST OF UNIMPEACHABLY GOOD FRUITS.

AN unknown correspondent, in Pittsburgh, writes us as follows:—"I am just in the midst of the improvement of a new place. My house is finished, my garden laid out, and now I am sitting at my table, up to my elbows in nursery catalogues—some of them almost books in size; and, shall I confess it, I am rather puzzled than aided in making a selection for my fruit garden. Among so many 'splendid,' 'first rate,' 'delicious' varieties, how am I to choose the few that I really want? Especially does this become difficult, when I look into the thing a little more closely, and observe that Mr. A. of Long Island casts a cloud of doubt over what Mr. B. of Western New-York considers of the highest excellence! In this dilemma, may not I, and other readers of your journal, (and undoubtedly there are

many in my position,) look to you for a little impartial advice? Tell those, for example, who, like myself, don't wish to go into the fruit growing business, but merely to stock a small fruit garden with choice fruit, and choice fruit only, what sorts we may plant that will be sure to give us the worth of our money, and not to disappoint us, whatever may be our soil, in other words, *unimpeachable sorts*. This may be difficult, but it is to you we naturally apply in our difficulties of this nature."

Our correspondent asks for a selection not easily made, when he requires a list of fruits of the first "quality, whatever may be the soil." To give such a list requires a great deal of observation, and large accumulation of facts in fruit culture, from all parts of the country. The favorite fruit

of one section is not unfrequently found altogether rejected in another; and several of the most celebrated fruits in the world demand soil of a certain composition and certain depth, or they are of no value. Where these soils are found, they are, on the other hand, priceless.

Still it would be wrong to say, that something cannot be done for the guidance of those who are in the dilemma of our Pittsburgh correspondent; and since he has appealed to us for assistance, we will give him a brief select list of fruits that are, in our opinion, "unimpeachably good in all soils."

We do not, by this, intend to have it understood, that we think any list can be prepared that will, in fact, be "unimpeachable"—for fruit cultivators have their whims and hobbies like other men, and the complete success of particular sorts in their own soil, is a more powerful argument in their favor, to their minds, than the eulogies of a thousand other fruit-growers. But there are a few fruits which have won a *large vote*, by their *uniformity of character*—a uniformity based upon excellence, hardiness, and productiveness—that we think may be safely commended to those who wish to plant only a small collection, and do not desire to run the risk of having indifferent sorts in their garden or orchard.

Our list of Apples would include the following: *Early Harvest, Early Strawberry, Williams' Favorite, Gravenstein, Porter, Baldwin, Ladies' Sweeting, Rhode Island Greening, Roxbury Russet.*

The list of Pears would embrace the following: *Bartlett, Beurré Bosc, Dix, Fondante d'Automne, Gray Doyenné, Louise bonne de Jersey, Seckel, Beurré d'Arenberg, Winter Nelis.*

The list of Plums as follows: *Bleecker's*

Green Gage, Jefferson, Lawrence's Favorite, Smith's Orleans, Purple Favorite.

The list of Cherries as follows: *Bauermann's May, Black Tartarian, Black Eagle, Downer's Late, Downton, Bigarreau, Elton, May Duke.*

The list of Peaches as follows: *Early York, George IV., Grosse Mignonne, Cooledge's Favorite, Bergen's Yellow, Royal George, Old Mixon Freestone, Large White Cling.*

Of Apricots the following: *Moorpark, Breda.*

Of Nectarines the following: *Elruge, Early Violet.*

This selection is small, and the practised eye will detect the omission of many of our favorite varieties. For example, among Apples, the *Newtown Pippin*, and the *Fall Pippin*, are both, in their season, fruits of unrivalled excellence. Yet, though they succeed well in many parts of the country, and in some districts are the source of large profits, in others they fail almost entirely, from a want of adaptation in the soil. If the list were intended only for our correspondent at Pittsburgh, we should also recommend the *White Doyenné Pear*; but this finest of fruits, since it fails in so many places on the sea-board, can be no longer counted among the *unimpeachables*; and so with several others.

Again, there are some *new* fruits, of such remarkable excellence, that they eclipse, in our estimation, most of those in these select lists. But as they have not yet been tested extensively in various parts of the country, it is impossible to pronounce positively on their adaptation to general culture. Among these are the *Onondaga* and *Van Mons' Leon le Clerc* Pears, the *Early Joe* and *Northern Spy* Apples, etc., of hardy and vigorous habit; there can, however, be little doubt, that experience will hereafter give

them as foremost a place for uniform hardiness and productiveness as for high and delicious flavor.

It would be easy to swell our *select list* to double its size. But then we should have

had partial doubts as to some points regarding several sorts to be named. As it stands now, it may be considered as vouched for by the most intelligent cultivators in various sections of the country, besides our own.

HINTS TO THOSE TRANSPLANTING TREES.

WE have great satisfaction in observing that the old system of crowding the roots of trees into holes of the smallest possible size, is abandoned by every intelligent planter in the country; that the public generally begin to understand, that plants require food as imperiously as animals; and that in proportion as a soil is poor, thin, heavy, or impenetrable to the delicate fibres or spongioles which mainly collect nourishment from the soil, is it necessary to dig large and deep spaces for the roots of trees, and supply the soil with manure or rich composts.

There are, however, still one or two points in the practice of transplanting, that are by no means thoroughly understood, and upon which some of the best cultivators are not fully agreed.

One of these is, *whether the head or branches of a transplanted tree should be pruned at the time of planting?*

Theoretically, it is undoubtedly true, that pruning is unnecessary and even improper, since there is naturally an exact balance or proportion between the amount of roots and branches of a healthy tree.

In *Lindley's Theory of Horticulture*, touching this point, the author remarks:—"The great point to attain in the first instance, [in a transplanted tree] is the renovation of the roots, and that will happen only in proportion to the healthy action of the leaves and buds; if, therefore, the

branches of a plant are removed by a pruning knife, a great obstacle is opposed to this renovation; but if they remain, new roots will be formed in proportion to their healthy action. The danger to be feared is, that the perspiration of the leaves may be so great, as to exhaust the system of its fluid contents faster than the roots can restore them, and in careless transplanting, this may doubtless happen; in such cases, it is certainly requisite that some part of the branches should be pruned away; but no more should be taken off than the exigency of the case obviously requires; and if the operation has been well performed there will be no necessity whatever."

This is sound *theory*, and we confess that we have so much respect for the natural symmetry of branches belonging to a well shaped tree, that we are always inclined to lean to the side of the largest protection and the least mutilation.

But *practice* has also its laws—its laws based on circumstances not always foreseen by theory—and laws so imperative as not to be neglected without serious loss or damage.

The question that practice immediately propounds to theory, in the business of transplanting, is how many roots may be lost in taking trees out of the ground, without demanding a rigid pruning of the branches?

The only case of transplanting which

can be considered perfect—that is to say, in which the natural balance of roots and branches is completely preserved, is when a plant in a pot is transplanted with its ball of roots entire. In this instance, since not a root is lost, the plant suffers no check, and hence this kind of transplanting may be performed successfully at any season. But every one familiar with the transplanting of trees and shrubs, as it is, and must be ordinarily performed, very well knows that it is difficult or impossible to preserve *all* the roots—and that, except in the case of favorite specimens, removed with especial care, a very considerable portion of the delicate fibres most essential to the supply of nourishment is lost.

Such being the case, (even in what is considered in this country, *careful* transplanting,) how much should the branches of the tree be reduced to keep up the balance?

A good deal of attention to this subject within a few years, has forced us to believe, against our earlier opinion, that a pretty severe shortening back of the head of a tree, is most decidedly beneficial, in all cases, except where the tree is so young that it has suffered no loss of roots in removal, or where the operation of taking it up has been performed with such extraordinary care as to preserve the balance of roots and branches.

There are also other circumstances besides the disturbance of the natural proportion of these parts of a tree, which have a decided influence on its success and vigorous growth after being transplanted.

The most important of these is the moisture of the climate. As it is well known that slips or cuttings of many trees and shrubs, will take root readily in a moist season, or in a damp situation, which almost entirely fail in a dry one, so the facility

with which transplanted trees take root and recover their normal condition of growth, is far greater in a moist climate than in a dry one. Hence, it is evident, at a glance, that, in a country as moist as Great Britain, transplanting is much more easily performed, and trees will much more rapidly recover from the shock of removal, than in a country where there is more solar heat, and a less frequent and copious supply of rains.

This accounts, no doubt, for the very strongly marked difference in the practice of England and the Continent, in transplanting trees. While in the former country, trees, and trees of large size, are most frequently removed with their heads entire, or nearly so, in France and Germany it has long been the practice (commended too by by such able physiologists as DE CANDOLLE and THOUIN,) to head back the tops of transplanted trees, in the severest manner, before planting them.

In a dry climate, and under the influence of bright sunshine, it is much more necessary to reduce the branches equally with the roots, since the perspiration of the leaves in the latter case is double that in a moist climate. Indeed, not only do the buds and leaves perspire, but the whole of the bark of the younger branches suffers a loss of fluids through its pores in a dry atmosphere.

Hence, as it is evident from theory alone, when these circumstances are all considered, it is only by reducing the head that we can prevent this excessive drain upon the fluids collected by the roots of the newly moved tree, which, if too great, must prove fatal to its life.*

For the last two seasons, an orchardist on the Hudson, who is a pretty extensive plan-

* It is owing to this disproportion, that many trees in this country, which start into leaf, and grow very well till July, die when the greater perspiration of the leaves takes place in that month.

ter of trees, has conducted some experiments, suggested by us, with a view to arrive at some satisfactory conclusions upon this subject, based upon practical data.

In 1846, he planted, in an orchard upon good mellow wheat soil, 180 apple trees. They were received from the nursery in the usual condition—that is, with the roots in fair order—but of course, like all nursery trees, somewhat shortened by the spade in digging.

They were all carefully planted in well prepared holes. Before planting, one-half of their number had their tops shortened back, so as to leave only one bud of the previous season's wood. The others were planted in the usual way, with their heads entire. The season was, on the whole, quite favorable. Of the ninety trees that had their heads pruned at the time of planting, only *two* died, and they nearly all made fine shoots—many of the latter, eighteen inches long. Of those that were planted with their heads entire, *eight* died; and though the rest started into healthy foliage, yet some of them lost the ends of their branches, few or none of them made shoots exceeding six inches in length, and not one of them had the deep green and luxuriant appearance at the end of the season, which the other half of the orchard presented. This, the second year's growth, is scarcely less markedly in favor of the pruned trees. They have now, not only larger and finer heads than those left untouched, but their heads are decidedly better shaped, and they are more luxuriant and promising in their general aspect.

The second experiment was tried this spring, on a small orchard of 78 peach trees. The trees were of pretty large size, being three years old from the bud. The site is a warm dry southern slope of a hill. One half the trees were headed back so much

as to reduce their whole heads one-half, taking off the better part of two years' growth: the remainder were planted without any reduction of the top.

The season being drier than the last, the difference is more strongly in favor of the pruned trees than in the first experiment. Only one tree died of the thirty-nine that were so severely headed back, and the remaining thirty-eight have made fine bushy heads of new shoots. *Twelve* died of the thirty-nine not pruned, and of the remainder many have lost parts or the whole of the upper portion of their branches.

It would appear, from these experiments, that by pruning off a part of the head of a transplanted tree, not only is the natural balance restored, and too great a drain upon the roots prevented, but that a stimulus is given to the vital action, which results in the production of stronger and more luxuriant shoots than would otherwise have been produced. All the juices of the plant are necessarily expended in the growth of a few buds, instead of many—and a few strong and healthy shoots start out, instead of many feeble ones. The advantage holds good for more than one season, for as the sap flows more freely through the large sap-vessels of a thrifty shoot, than through the small and compressed sap-vessels of a feeble shoot, it follows, that the pruned tree, with its luxuriant young growth, will be in a much better condition to conduct the circulation of the juices which impel the growth of the plant in the coming spring, than the other, which has only short and stunted branches.

We have had a good illustration of this effect of pruning upon the vital action of a newly planted tree, in our own garden the present season. In removing an Osage Orange tree, about twelve feet high, with the trunk of the thickness of a man's arm,

we determined, in order to improve the shape of the head, to reduce the branches very considerably on one side only. Those on the opposite side were left at their full length. The tree expanded its leaves late, but upon the portion headed back, they expanded much earlier than on the remaining part. About the first of July, young shoots were pushed forth on all the pruned branches—while the unpruned branches began to show symptoms of failing entirely, by the shrivelling of the bark, and pale-yellowish color of the leaves. We then headed back these branches also. The good effect was almost immediately felt. The perspiring system of the tree was reduced to an equality with the absorbing, and all the fluids taken up by the roots were directed to the growth and nutriment of a few buds, instead of a great number. The tree is now covered all over with a thrifty growth of young wood—though the shoots are, of course, by no means so long as they would have been, had the shortening back been applied to the whole top in the beginning.

Looking at these practical demonstrations (with others that we have not room to detail at present,) we are obliged to say, that we must recommend, for this climate, the *Continental* rather than the *English* mode in transplanting. We think, in all cases, where the roots of the trees are large, and they have not been removed with unusual care, or where they are small and have lost a portion of their roots in the removal, a corresponding part of the branches should also be pruned away before replant-

ing them. In small trees, it will usually be quite sufficient to shorten back half the current year's growth; in larger trees double that quantity may be cut off with advantage; and in particular cases, where but half the roots, owing to carelessness or bad management, have been obtained, half the top should also be cut off, to preserve the balance, and thereby the life of the tree.

In pruning trees during transplanting, a judicious pruner will not dock, or cut off the top with an absence of all care or respect of natural form, as if he had brought them to a guillotine, but he will shorten the branches equally on all sides, so as to preserve the native proportion of the head—or rather, so that when the new branches begin to grow, they may speedily be able to reproduce the natural symmetry again.

The only trees that must, we think, be excepted from these remarks, are *evergreens*, and especially *resinous* evergreens, or the Pine and Fir tribe. They suffer so much less by perspiration of the leaves on transplanting than deciduous trees, owing to the much smaller surface of foliage, which they present, and the fewer pores in the leaves themselves, that a reduction of the branches is by no means necessary or proper in most cases. When we add to this, that the leading shoot once destroyed, is seldom replaced by evergreen trees, without a loss of the entire symmetry of the tree, it will be seen that they require treatment entirely different, in some respects, from the deciduous trees.

THE BALDWIN APPLE.—A correspondent says this fine apple does well in Western New-York, which has a climate much similar to that of Massachusetts; but at Cleveland, Ohio, it suffers from specks of black or dry rot, like those in the Pennock.

ON PRESERVING GRAPES FOR WINTER USE.

BY W. WILLIAMS, NEW-YORK.

DEAR SIR—The Isabella and Catawba grape vines are among the most valuable fruit trees known to Americans; for I am inclined to doubt greatly, if any other tree will bear so large and so regular a crop as they do, in all soils and in all sections of the country, except the upper part of New-England, where the climate is too cold for them.

They have been multiplied within the last ten years so much, in some of the Atlantic States, that there is now hardly a farmer's garden without one or more of these vines. In many farmers' dooryards I have noticed, with much pleasure, the Isabella grape, trained over a trellis in front of the kitchen or dairy, so as to make a cheap or very ornamental kind of verandah, such as you may see in Italy.

There are but few, however, of those who raise this prolific grape, who are aware how much the season in which ripe grapes are fit for the table, may be prolonged by a little care and management. Indeed, for my own part, I consider the ease with which these two grapes may be kept for winter use to be one of the strongest recommendations to their culture.

I will, if you will allow me, detail two modes of preserving these native grapes, that I have, for three years past, practised with success. They are, no doubt, familiar to many of your readers, but as I very seldom meet with this pleasant fruit at any of my neighbors' houses in winter, I conclude that it will also be new to many others.

At my farm, a few miles from the city, I have an ice-house well constructed, which keeps a supply of ice through the whole year. In this I practise one mode of pre-

serving grapes. This mode is applied to those which I wish for more immediate use, say from the season of frosts till near Christmas.

I have, in this ice-house, a series of open shelves, made of thin and narrow strips of pine, so as to form slender lattices. As soon as there is danger of a frost which might injure the grape, (in general early in October,) I have the grapes for this purpose carefully picked, and laid in single layers on these lattice shelves in the ice-house. There the temperature is so low and regular, that no perceptible change takes place for a long time, and I am therefore, able to supply my table every day with grapes, as fresh, to all appearance, as when picked, for a month or six weeks after they are usually to be had in market.

The second mode is calculated to preserve them for a longer time. By its means, I usually have a good supply from Christmas to March, and have once or twice kept them quite sound till April.

It is very simple. The grapes should be gathered a little before full maturity—say the last of September here. A fine windy day should be chosen, and the fruit should be picked and packed away, quite dry, as upon this depends their keeping well. You should be provided with a proper number of small boxes, holding about a peck each, grape jars, or champagne baskets—the latter answer the purpose well, if lined loosely with paper before using them. I put a layer of cotton in the bottom, and then a layer of grapes, and so alternately till the box is full; I then cover with a layer of cotton, and fasten the cover down with nails or otherwise.

I do not find it best to endeavor to exclude the air entirely. Decay takes place sooner when that is done. For the same reason I have found it better to choose *small* boxes, such as may be opened every week, as wanted for use, rather than larger ones.

As it is considered by my family no mean addition to the dessert, these grapes in abundance in winter, I have no doubt there are numerous readers of the Horticulturist who will put this simple process of preserving them into practice. I ought to add, before closing my letter, that the boxes should be kept in a dry airy place, free from frost. Your obedient,

W. WILLIAMS.

New-York, Oct. 11, 1847.

[We will add a single practical suggestion to the foregoing remarks. Our correspondent does not state in what *form* the cotton is to be employed. We have been in the habit of preserving these native grapes much in the same way, for winter use, for ten or fifteen years past, and we find that the prepared sheets of the cotton *wadding*, to be found in all dry-goods shops, are much preferable for the purpose to the cotton *batting* generally employed. The former is equally soft, and its glazed surface prevents the fibres of cotton from adhering to the grapes, which is always the case when the later is used.—ED.]

THE HYACINTH AND NARCISSUS.

BY MR. GLENNY.*

THE soil in which the Hyacinth is so successfully grown in Holland is doubtless, the alluvial soil of the place, but much is done by dressing it. Naturally, a grey, sandy and not very rich earth, it requires then twice its bulk of manure, which is three-fourths cow dung, and one fourth vegetable mould. In England, the nearest we can get to perfection, in the way of compost is rotted turfs, not cut more than three inches thick originally, and allowed to lay in heaps till the vegetable parts have become mould; this should be rubbed through a coarse sieve that would let a marble through, and as it falls through on the heap, some one ought to be on the watch to detect the wireworm or grub, for they show very plainly as the earth falls through on the heap, and runs down the sides. One half of this compost, and the other half made up of two parts cow dung, and one part clean, well-washed sand, will grow the Hyacinth as well as they are grown in Holland [The common white sand of the sea-shore, is much the best for bulb composts.—ED.] The compost must

be well mixed, and should lay together all the warm months, in a situation where it can have all the sun, and be turned over several times.

Preparation of the Bed.—In September dig out a space four feet in width, and as long as the number of bulbs to be planted in one bed require, reckoning that fourteen grow in every foot of length, namely two cross rows of seven in a row. Let the depth be two feet, and the place well drained. At the bottom, put three inches' thickness of cow dung, or horse dung rotted into mould or thoroughly decomposed; the dung from an old melon or cucumber bed will answer; upon this put the compost from the heap already described, and fill it up three inches above the surface of the ordinary ground, for the compost will subside; towards the end of the month, it will have sunk a good deal, and more must be put on, so as to make it quite level with the surface of the other ground.

Arrangement of the Bulbs.—To make a bed look to the best advantage, you must choose such bulbs as will all blow in one season, that is to say, at one time, for no-

* From the London Horticultural Magazine.

thing looks worse or more completely mars the effect of a bed, than to have some blooming, and others not showing colour in the early season, and some decayed, while the others are in flower when it is later. The colour should be diversified according to arrangement, and it would be well to get all the varieties of the same length or near it. The arrangement that would be most effective is that described below; it is impossible to give a better contrast in each row, or from row to row. It is also desirable to limit the varieties to one of each colour, that is to say, the dark blue only one sort, the light blue only one sort, and so on, each colour being represented by only one kind. The subjoined is the arrangement proposed :

dark red	white	light red	dark blue	light red	white
light blue	dark red	white	light red	white	dark red
yellow	light blue	dark red	white	dark red	light blue
dark blue	yellow	light blue	dark red	light blue	yellow
light red	dark blue	yellow	light blue	yellow	dark blue
white	light red	dark blue	yellow	dark blue	light red

The same may be repeated as often as the length of the bed requires. Experience may enable a person in time to improve greatly upon the first appearance, by adopting more than one variety of each colour, but it is better not to attempt it at first. The compost being quite level with the other part of the garden, the bulbs are to be placed six inches apart every way, and the best way to mark the place is to strain a line down the centre of the bed, and draw a slight drill or make a mark by merely pressing the line to the soil, by drawing the back of the rake along it; then stretch it in the same way six inches off, and by the repeating this, making the seven long marks. The cross marks may be made by pressing a straight rod in the soil slightly at six inches apart all the way down. On the points where the lines cross each other place the bulbs, and press them gently into the soil, so that they may not move when you cover them up; when they are all placed, put in some pegs at the different



Fig. 32. *The Double Hyacinth.*

parts of the bed, the tops standing six inches above the base of the bulbs, and make up the soil to that height all over the bed. By rights, the bed should be boarded round with a six inch rim to fix on, for then the compost to cover in with would be so easily regulated. Have hoops or irons across the bed, to enable you to cover them against frost and heavy falls of snow or hail, and it is worth while to have a stage over them, and a cloth like those for tulips and carnations.

Management up to Blooming time.—The only necessary attention now is, to protect them against bad weather through the winter months; and for this purpose litter of any kind will answer all November, December and January. In February or March, according to the season, they will be above ground, and then the mats or cloths must be used; because the bloom buds, if affected no other way, will be greatly stunted in size by frost. [In this climate the spring opens much later, and there is little or no danger of injury to the

buds after they appear.—ED.] As the blooms begin to show colour, they must be shaded from the violent heat of the sun and from strong winds; it may be necessary to place sticks, and tie up the stems of the taller kinds, but they cannot be too dwarf for beds. As the bloom advances they must be shaded from the sun, for it would materially shorten the period of their flowering if they were exposed to its scorching rays.

After Blooming.—The whole of the covering should be removed as soon as the perfection of the bloom has gone, and the plants must have the benefit of all the rain and air till the leaves turn yellow. They may then be taken up in as many baskets as there are sorts, and as a simple mode of doing it, perhaps the best way would be to take up one sort at a time, because there can then be no mistake; the kinds all form lines in particular directions, and the roots are so large, that there is no danger of missing any, like tulips, which occasionally elude our vigilance, however careful we may be. The bulbs should be taken to a shady place under cover, and be laid out to dry off, and remain there until the foliage is completely dead, after which they should be trimmed, that is, the stalks and leaves should be cut close, and the fibres pulled off, and the offsets taken away; they may then be put away for the season of rest.

Treatment of Offsets.—Prepare beds similar to those for blooming the finer bulbs, and plant the offsets in the same number of rows, but they may be three inches instead of six inches apart, one of the ways, whether across or lengthways is immaterial in respect of the bulbs, but probably it is best to have them close in the cross rows, instead of the long ones, on account of their being easier kept clear of weeds. Plant them so as to be four or five inches covered. When they are up, any that show bloom should be deprived of all the buds but one or two at the top of the truss or spike; one is enough if you can ensure it, though two are left until it is seen that the top one will stand. These beds need not have any protection beyond a little litter of some kind loosely laid upon the top. When the foliage has decayed down, the bulbs may be taken up as the matured

ones are, and the whole sorted; the larger ones to be put in six inches apart instead of three; they are to be replanted and treated similarly each year, until they arrive at the size which is marketable, and this may be generally told by the size of the spike, which should be reduced to a single top pip, season after season, until it will come sufficiently large to look well with the matured bulbs. The object of depriving the spike of all its buds but one, is to throw the strength that would be divided among the flowers into the bulb itself.

MONTHLY OPERATIONS.—*January.*—The bulbs being in the ground, and requiring nothing but protection from hard frosts, should be covered with litter of some kind. [*Old tan bark or dry leaves will answer.*—ED.]

February.—A continuation of protection being all that is required, the litter need not be removed until the plants are breaking through the surface.

March.—The beds may now have the sun, and all the air, if there be no frost; but must have the litter replaced on doubtful evenings, lest a frost should come on in the night. As soon as they are well up, the earth should be stirred between the roots, the compost being well crumbled, and laid close round the stems.

April.—The flowers will be developing themselves rapidly, if the spring has been mild, and the past winter genial. Before the flowers are opened, warm showers will be beneficial; afterwards they would only damage the bloom. The main roots will continue in bloom a long time, if carefully shaded. The offset buds must be looked to, and the pips reduced on each spike to one or two of the top ones; so also must seedlings that are beginning to flower. Younger seedlings, as well as the beds generally, must be carefully weeded.

May.—When the bloom has passed the perfection, sufficiently to be no longer appreciated for show, the coverings must be taken off, but until then the sun should never be allowed to shine on the open flowers. An arid sun and moderate rain are, however desirable for the perfecting of the bulbs. Keep every thing clear of weeds. Mark any seedlings that are likely to be useful as additions to the present varieties.

June.—This month the foliage will in general decay enough to allow of the bulbs to be taken up and placed in the shade to dry; those, however, which are seeding, will not be so far advanced, they will keep growing until the seed is almost ripe; of course there must be exceptions in favor of such plants. We have seen nearly every flower in a bed seed, and the plants keep growing till a late period; but if seed is not desired, the pips of bloom should be picked off as soon as the cloth is removed, or the other coverings taken away.

July.—This month they will have dried sufficiently to be deprived of their decayed foliage and stems, and be placed in bags. Seeds may be gathered of such as are standing out, and the bulbs taken up as soon afterwards as the leaves die down.

August.—Turn out all the compost from the beds, and lay it in ridges on each side, to be turned over occasionally to sweeten.

September.—Examine your bulbs, and sort them for planting. Never plant a doubtful one in the best bed, as it is obvious that in an arrangement so uniform, a missed bloom or a decayed plant would be a great eyesore.

October.—Plant the best bed and all out beds and offset beds; if there be any reason for keeping bulbs out of the ground, a month is no object, but this month is the best; from this time all the beds, especially seedlings, and beds of seed, must, at any cost be kept clear of weeds.

November.—Plant whatever may have been kept out of ground till now, and sow seed if not done already. Cover the seedlings and small offset beds with litter.

December.—Repeat the November treatment all through.

PROPERTIES OF THE HYACINTH.—Some of these are already appreciated a little, but none sufficiently distinct. There are a few of the present varieties which have long spikes of flowers, and those very compact—both of which are desirable—but they, for the most part, have very ill-shaped pips. There are others which have very prettily formed pips, of a great size, but they are far apart on the spike, and some hang awkwardly; and those who exhibit the flower, know but little as to what caprice is to de-

cide their fate; but as the time when the flower can be seen forced has arrived, and the period for showing in pots is approaching, we take the opportunity of defining a little the properties which should be esteemed; as nearly all the points have been attained in different flowers, there is every reason to hope, that as soon as we persevere in raising seedlings in this country, and force the Dutch to follow the example, we shall make rapid advances toward obtaining several properties in the same flower. We commence with the pip.

Each pip or flower should be round, and not ragged. The petals should be broad, thick, blunt at the ends, not pointed, and reflex enough to throw up the centre well. The footstalk should be strong, and hold the flower out stiff in a vertical position, that is facing the spectator, and by no means weak, to allow the pip to hang with the face sloping toward the ground. The footstalks should also be of a length, to make the pips touch each other and no more. The pips should be large, for unless the pips be large, they cannot touch each other without very short foot stalks, and the flowers would be so close to the stem, that the truss itself would be no size. Double flowers should have the rows of petals above each other very regularly imbricated, so as to throw up the centre. The outer petals, therefore, of a double flower, need not reflex, and should not reflex as much as a single one, because the centre is raised by the second and third rows of petals.

The spike should be bold, round, compact, and pyramidal, with a number of flowers at the bottom, gradually diminishing to a single flower at the top. The flower stem should be very strong and upright, and no part of it should be seen from the lowest flowers to the top, in consequence of the closeness of the pips to each other.

The colours should be bright, clear, and dense, whatever the shade; and any better approach to scarlet, blue or yellow, than those shades we now possess, would be highly esteemed; flowers with dark eyes, very clear outsides, and those with striped petals, would be held to be better than selfs in general, but would give no point against form.

THE NARCISSUS.

THE Narcissus is one of the most lovely of our spring flowers. The perfume is more powerful than that of most other flowers; and if there are too many in a room, it will affect any weakly person. It appears a powerful narcotic, and will give even robust persons a slight headache. The varieties most esteemed are those which bloom in large clusters. Both the yellow and white are esteemed, and many thousands are annually imported from Holland, and are grown as well in the common borders as in pots and glasses. They make a pretty display among the early spring flowers, and there are many different varieties which group well. The best possible effect can be produced by them in wildernesses, in large rough borders, clumps and geometrical gardens. The soil in which they succeed best is rich and light, but they will grow in any thing, from sand to stiff clay. In light rich soil the bulbs do not deteriorate, and the offsets may be grown up to maturity very soon, and they may be raised from seed without any difficulty. But the culture is so like that of the Hyacinth, that we need only repeat the directions in full, if we desired to go into details.

There is a difference between the mode of growing for the sake of stock, and growing for bloom. Those who grow for stock should take up the bulbs every season, and remove the offsets, to be planted out till they come to maturity; and even these are taken up every year, and kept out of ground some time to rest, and then planted again at the proper season, sufficiently far apart to enable them to swell and become good round bulbs. On the other hand, those who wise merely for quantity of bloom, let them remain in their borders or beds three years. There is then quite as much increase, but the roots, from being close together, and not having room to swell, become unsightly, and would not, in a general way, do for market; for the greater portion of those imported or brought to market in spring are for blooming in glasses, which expose the entire bulb; and if not handsome, for this purpose they would be unsaleable. The varieties which bloom with handsome trusses of many flowers, are

commonly called *Polyanthus Narcissus*; but there are many that flower with a single bloom, others with two or three. The colours simply vary from yellow to white, some being yellow with a deeper coloured cup, almost orange colour; others are white with yellow cups; some are double, others single; some pure white—indeed one is called the paper white, and exceedingly pretty it is. Upon the whole, the numerous varieties of the *Narcissus* form a beautiful group, and will bloom in any way that the ordinary spring bulbs will flower. For this reason we have placed it among them in the following paper on the many ways of flowering the spring bulbs, such as *Hyacinths*, *Crocuses*, *Tulips*, and others, which will do well under the same treatment.

PROPERTIES OF THE NARCISSUS.—The great variety of this beautiful spring flower would almost seem to defy us to lay down general rules, yet there is no more difficulty in imagining what would be the most beautiful, than there is in any other of the numerous families for which we have already provided models of perfection.

It is very true that some *Narcissus* have only a single flower, others a large bunch—some are white, others yellow—some have narrow petals, others broad—but all are pointed. The only varieties, however, calculated for florists or show flowers, are those which have bunches or heads of flowers, and a few necessary qualities would render them beautiful objects.

First. The flowers should be circular and large.

Second. They should expand flat, and the cup which is in the centre should stand out well.

Third. The petals should be thick, smooth, firm, free from notch or roughness on the edges, and have no points.

Fourth. The bunch of flowers should not consist of less than seven; the footstalks should be of such length as to allow the flowers to touch each other at the edge, and present an even, though rounding or dome-like surface, with one bloom in the middle, the other six forming a circle round it.

Fifth. The stem should be firm, strong, elastic, and not more than ten inches in length. The leaves should be short, broad

and bright. And there must not be more than one flower stem to a show flower.

Sixth. If the variety be white, it should be pure; and the yellow cup should be bright. If the variety be yellow, it cannot be too bright.

Double flowers, and Narcissus of numerous kinds, with only one or two flowers in a sheath, will not be considered subjects of exhibition, except in collections of forced flowers.

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General Remarks on the Hyacinth, the Narcissus, and Bulbs in general.

There is so much similarity in the management required for the Hyacinth and Narcissus, that they ought almost to be coupled, as are Carnations and Picotees. As there is not the diversity of colour in the Narcissus, that we have in the Hyacinth, there is no temptation to grow them in beds; in all other respects, whether from seed, from offsets, or in growing matured imported bulbs, the management is the same. But we have left a large field untouched as regards the different modes of growing the Hyacinth, and confined ourselves to the out-of-door treatment; and reserved what we have to say of forcing and house-growing for bulbs in general, such as the early kinds of Tulips, the Narcissus, the Hyacinth, the Crocus, and other subjects, that we may treat them all alike.

Of the many ways in which a bulb may be grown, the most common are the following:—in water, in pots of mould, in wet sand, and in moss. All of these are well in their way, but for elegance give us moss; for ease, water; for a make-shift, sand; and for the sake of the bulbs themselves, pots of mould.

IN WATER.—Fill up the glasses till the bottom of the bulb will touch it, and constantly fill up the glass as the bulb absorbs it. The custom of putting them in the dark has become very prevalent; but experiments which have been tried, purposely to test the advantage derived from this plan, give no indication of its superiority. The Narcissus, Hyacinth, Crocus, and early Tulip, all grow well in water; and some that we have seen placed in a strong light from the first, have proved as strong and perfect as a similar number placed three or

four weeks in the dark. The notion entertained is, that the roots should be developed before the growth of the foliage begins; and that in the dark, the roots grow, but the foliage does not advance materially. We have not found this to be the case, although we have, until the present season, acted upon the suggestion. River water or rain water is far better than water from a well, and we have changed it every three weeks, though filling it up as it is absorbed by the roots will do. We have invariably objected to putting anything in the water, although we have seen it done by many, for we have never seen anything gained in colour, strength, or size of flowers.

IN WET SAND.—This has no other recommendation than the saving of trouble, as compared with water, among those persons who fancied it necessary to be always changing it; and we feel quite convinced that the plants do not grow so strong in it as they do in water or mould. It has one advantage—its weight, which tends to steady the glasses or vases in which the flowers are bloomed. It is indeed easy to conceive, that where a vessel is filled with sand, which contains no nourishing qualities whatever, the plant may exhaust the fertilizing qualities of the water soon, because these must necessarily be a very small quantity; and although it may be filled up as often as necessary, and be kept full, all the nourishing properties in a small quantity must be much less than if the whole bulk were water. There is, however, so much in the bulb itself, that the flower and leaves will develop themselves with a very little assistance. Nevertheless, there is a vast difference in the strength of a plant fully nourished, and one starved by a limited supply.

IN WET MOSS.—This medium, properly prepared, and in a proper vessel, will be found both effective and pretty. Suppose it to be a flower pot—the hole at the bottom should be stopped; but the wet moss enables us to grow bulbs in almost any shaped utensil; a punch bowl, a salad bowl, a deep dish, basin, or jar, will do. A little sand at the bottom, and the moss pressed down level with the edge, will be sufficient; the bulbs are then placed on the surface, and rather pressed in than otherwise. If

the vessel be large enough to hold half a dozen or a dozen things, the centre may be a Narcissus, round this six Hyacinths, round the Hyacinths a row of early Van Thol Tulips, and outside of all a row of Crocuses, of the three different colours; or, as the Tulips are inclined to yellow, perhaps blue and white alternately will do better. The moss is to be wetted well, and fine green picked moss should be piled up all over the bulbs, which may be completely hidden by it. This might be done in a large punch or salad bowl, or round dish, or glass milk pan. Smaller vessels may be used with single bulbs, or with two or three or more. The moss in which they are placed, should be pressed down, and need not be of the finest colour; but that put at top, forming a rounding surface, and covering the bulbs, ought to be of the best colour, and the handsomest that could be picked; for the moss is of itself a pretty object, even before the bulbs throw up their green foliage. Those who prefer to see the bulbs, may merely put some of the best moss between them, and not enough to cover them.

IN POTS.—It is the practice to pot bulbs close to or above the surface, to place them all under a heap of ashes, or sawdust, or sand, to be taken out as they are wanted for forcing. It is far better to obtain the pots made on purpose, twice the height of an ordinary pot, and to put the bulb on the soil with the pot only half-filled; then fill the pot so that a good three or four inches of compost is above the bulb: these may be plunged in the open ground, and covered with litter. The plant begins growing directly; and when required for forcing, from time to time, they only want to be placed in heat a little earlier, to make allowance for the time they are coming through the earth; and all the later ones, instead of having three or four inches of yellow foliage, which has been drawn up through the ashes or sawdust, or other medium in which they have been buried, will be found hardly through the compost, or, if through, by no means drawn up. This applies to all the hardy bulbs, that are capable of being grown in pots. The soil should be the same as has been recommend-

ed for beds; and the only care required is that of supplying water, so that the soil should never be dry; but as there is real nourishment in the soil, it must not be saturated with water always; on the contrary, the treatment should be much the same as other potted plants, such as Geraniums, which ought to be kept moist, but never wet. The pots should always be kept in a strong light, and until the flowers show colour, may have as much sun as possible, and air in mild weather, unless they are in forcing heat, which, of course, renders this improper. For forcing, the bulbs may be potted as early as September, and may be placed in heat at once; and from that time, till the end of December, they may be potted with pretty nearly as good success; but some bulbs are weakened by keeping out till that time, and others, even of the same varieties, may be picked out that stand very well. We prefer, on every account, potting early, and plunging the pots to their rims in the ordinary ground, merely covering with litter, to keep off the frost in case of a severe one. From this situation, they can be taken to force, as they are likely to be wanted; and they make far more handsome plants when so treated, than they do when buried in any thing; and the two or three inches growth is above instead of under the surface.

It only remains for us to name a few of the best and cheapest for the different purposes, always premising that every kind will grow well in pots, but that some do better than others in glasses.

HYACINTHS.—*For Glasses or pots*—*early*: Waterloo, d. red; Groot Voorst, d. pale flesh colour; Duc de Normandy, d. blue; Alamode, d. blue; Passe Tout, d. blue; Alamode, d. white; Nannette, d. white; Grand Vainqueur, s. white; Paix d'Amiens, s. pink; L'Amie de Cœur, s. purple. *Later*: Panorama, d. red; Mignon de Dryfhout, d. blue; Lord Wellington, d. blue; Kroon Von Indien, d. dark blue; Pasquin, d. light blue; Anna Maria, d. white; Virgo, d. white, violet eye; Orondates, s. light blue; La Balaine, s. flesh colour.

For pots only—*early*: Charlotte Mari-
anne, d. red; Madame Zoutman, d. rose;
Aimable Rosetta, d. flesh colour; Vulcan,

s. light blue ; La Deesse, d. white ; Miss Kitty, d. white, red eye. *Later* : Robin Hood, d. dark blue ; Globe Terrestre, d. light blue ; Susannah Elizabeth, d. blue ; Don Gratuit, d. white ; Og, Roi de Basan, d. white ; Sultan Achmet, d. white ; Bonquette d'Orange, d. yellow ; Louise d'Or, d. yellow ; Voltaire, s. white ; St. Clair, s. red ; Grand Vidette, s. light blue ; Prince of Waterloo, d. white.

NARCISSUS.—*For pots or glasses* : Grand Monarque, white and yellow cups ; Czar de Moscovi, white and yellow ; Grand Primo, white and orange ; Bazelman Major, white

and yellow ; Soleil d'Or, yellow and orange ; New Yellow Primo, yellow ; Double Roman, yellow and white ; Paper White, pure white.—Jonquills, yellow, double and single.

Early Tulips.—*Single* : Clarimond, two varieties, rose and white ; Van Thol, red and yellow ; New Yellow Van Thol ; Keizer's Kroon, scarlet and yellow ; Paragon Constant, rose and white ; Gold Standard, gold colour and red. *Double* : Van Thol, red and yellow ; Tournesol, scarlet and yellow ; La Candeur, white ; Bonaparte, dark violet ; Crown Imperial, red and white ; Double Yellow.

DOES THE BERBERRY CAUSE BLIGHT IN GRAIN ?

TRANSLATED FROM THE REVUE HORTICOLE.

THERE is a popular belief, in some parts of New-England, that the common Berberry (*Berberis vulgaris*) is the cause of a peculiar blight, not unfrequently found in grain fields in its neighborhood. Naturalists who have investigated this subject, have satisfied themselves that there is no foundation for this belief, as the grain blight is an entirely distinct species of fungus from that which grows upon the Berberry. The following remarks, by M. PEPIN, from a late number of the *Revue Horticole*, throw some additional light on the subject.

The Berberry bush makes a good hedge, and we would suggest to New-England farmers to plant it along the roadsides, and trim it in hedge form, instead of rooting it out as an enemy to profitable agriculture. There are few native shrubs more ornamental than the Berberry, when at this season of the year it is laden with its numerous clusters of bright red berries ; and it grows with ease in the poorest soil. On the estate of HORACE GRAY, Esq., at Nonantum Hill, near Boston, there is a Berberry hedge, which has been properly trimmed for three or four years, and is now a capital living

fence. The following is a translation of M. PEPIN's remarks.—ED.

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The wet spring, and the frequent changes of temperature that we experienced at the commencement of the year 1846, did much injury to the development and formation of different grains, such as wheat, rye, barley, maize, oats, etc., which suffered much more from the rot and smut than usual.

There are some cultivators who are not sufficiently aware that this injury is owing to the presence of parasitical fungi, which develop themselves in grain, and which develop themselves with more intensity when *the early spring is damp, and the temperature of the nights very cold* ; these atmospheric causes contribute much to the formation of mildew, and of the fungi peculiar to these plants.

There are also many cultivators who attribute this disease to the presence of *Berberis hedges*, planted near the fields of wheat and other grain for fences. But this has been proved not to be the case ; botanists and physiologists have clearly demonstrated that the fungus which grows on the

Berberry, would not live upon grain, and that, in short, it is not the same disease. The same observation applies to the Savin tree, to which is attributed the sad effects of the disease of fruit trees, and particularly of the Pear tree. To dispel this idea, that the Berberry produced the mildew of grain, M. le PRESIDENT SEGUIER affirms, as a proof of the contrary, that he has on one of his farms, a field of grain surrounded by a hedge of Berberry, nearly 600 feet in length, and that the grain of this field was never affected by mildew, during the fourteen years that the hedge remained.

In the Royal School of Alfort, several experiments were made in 1815 and 1816, of which the result was to place beyond a doubt the impossibility of this injurious influence. I have seen these experiments repeated many times, in large parks, where Berberry bushes of very large size were growing, near which grain was cultivated, and if the disease was now and then discovered in it, it was always independent of this elegant shrub, to which, in some districts, it is to be regretted that such unfortunate effects are attributed.

PEPIN.

AN EXPERIMENT IN TRANSPLANTING.

BY O. L., BALTIMORE, MARYLAND.

WE received the following communication after our article in the present number, on transplanting, was in type. The experiment detailed was an interesting one, and serves as an additional illustration of the advantages of pruning transplanted trees, which we have there pointed out.—ED.

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DEAR SIR—I take the liberty of sending you the following account of an *experiment in Horticulture*, which, I think, may throw some light on the interesting question of pruning.

On Thursday, May 20th, of this year, a fine plant of *Lagerstræmia indica*, commonly called "Crape Myrtle," about eight or nine feet in height, and about fifteen or twenty feet in circumference, around the extreme branches, was taken up from a warm spot in the city of Baltimore, grown in a private garden in a sheltered situation, with a view to its removal to my country seat. It was in full vigor and growth, the branches covered with young and healthy leaves, and the circulation going on unin-

terruptedly. The weather had been unusually dry, no rain having fallen for some weeks previously. The tree was carefully taken up, endeavoring to preserve as much as possible of the soil around the roots, but without any of the previous preparation of digging trenches, watering, etc., as recommended by Mr. PERKINS, for transplanting trees in summer. The number of your journal containing his article, indeed, was not at hand, and the process as described by him and executed so successfully, did not occur to me. I made the attempt at a venture, and with scarcely a hope of success.

On lifting the tree to place it in the cart, most of the soil fell away from the roots in a loose powder, owing, doubtless, to the long preceding drouth. In this condition a piece of Russian bass mat was wrapped around the exposed roots, and the tree transported a distance of two miles, one man driving the cart, another holding by the stem of the tree, to prevent its being blown over by the wind.

It was placed in a hole in the lawn, previously prepared for it, and a small quantity of rich loam and well rotted manure mingled with the soil, and the whole nicely filled in around the roots; the tree was staked, and the *leaves* subsequently well sprinkled over every evening from the rose of a watering pot. This was continued for about three weeks, the leaves, in the mean while, drooping more and more upon the tree, becoming flaccid and shrivelled, exchanging their former healthy green for a yellowish sickly hue, and the whole appearance of the plant indicating a total failure. My gardener gave up the tree for lost, and discontinued watering it. We neglected it for about a week, during which time, its speedy death appeared still more certain.

Being particularly anxious to preserve the tree, as I had never seen it in flower, I determined upon an experiment, which reflection induced me to believe might possibly save it. The mental process, and the conclusion to which it brought me, were something as follows: The leaves upon this tree still remain, not one of them having fallen, nor has any single branch of it died outright; in other words, there is no local, circumscribed disease. On indenting the bark with the finger nail, its bright green colour sufficiently indicates that the circulation still goes on. This healthy appearance, however, of the inner bark, is less evident, the more nearly we approach the extremities of the branches, and most distinct near the base of the trunk. The extreme branches, with their leaves, look decidedly the worst; that is, those most remote from the central supply of sap. These facts naturally suggested the conclusion, that the roots still continue to take up a certain portion of nourishment from the ground, but that this circulating fluid, for

some reason, fails to perform its office; fails to undergo those changes in the leaf, which are essential to the life and health of the plant.

On seeking for the cause of this failure, I attributed it to an *excess of leaf*—a disproportion between the extent of surface exposed to the sunlight, (every inch of that surface, too, making the same demand upon the supply of sap,) and the diminished supply of sap itself, occasioned by a number of the spongioles, or rootlets, having been removed during the operation of transplanting. Several considerations tended to confirm this view. In removing the plant, the roots necessarily suffered severely, their absorbent extremities were mutilated, so that they are incapable of furnishing the same amount of nutritive fluid to the body and leaves of the tree, which they previously did with ease, while the demand for that supply, the top of the tree being entire, continues unabated. The leaves again profit reciprocally, by the important function which they perform—it is as necessary to their health that that function should remain uninterfered with, as to the health of any other portion of the vegetable structure. Any deranging cause shows itself at once, in their altered appearance. When, from any general disease, a tree is about to die, the leaves usually present the earliest symptoms. When, in the autumn, the capillary tubes become impervious, from the deposition of organized matter, the leaves fall. Again, we know, that in transplanting at the proper seasons, a tree is more likely to survive, if judiciously pruned, before placed in its new situation, and probably for the same reason which I have given above, that the proportion between its absorbent and exhalent organs is kept within due bounds. Pruning in midsummer, when the sap is in full flow, speedily

develops new leaf buds, immediately below the part removed, which grow more rapidly than the original branch.

These reflections suggested the remedy to be applied—by removing a large portion of the foliage which now fulfils its office so imperfectly. By adapting, in this manner, the capacity of the instrument to the labor demanded of it, I conceived that the object might be accomplished. I directed the gardener, therefore, to cut away unsparingly all the upper portion of the head, leaving but a few branches here and there. This was done on June 26th, and the very next day I felt convinced, from the fresh, firm, erect aspect of the few leaves which had been

left, that the tree would survive. Some refreshing rains about this time fortunately assisted the progress of the cure, and I had the satisfaction of beholding the plant, during the past summer, studded with its large and fragrant pink racemes, the admiration of all visitors, to whom, as you may imagine, I enjoyed the pleasure of relating the experiment.

As it may serve to illustrate the true principles of pruning, or, perhaps, suggest a practice which may be found useful in some cases, I take the liberty of transmitting it to you, agreeably to your request to amateurs, through the columns of your Horticulturist. Your obt. s'v't, O. L.

A VISIT TO THE JARDIN DES PLANTES AT PARIS.

BY L. B. PARSONS, FLUSHING, L. I.

It was on one of the most clear and beautiful days, which an early spring can boast, that, crossing the Pont d'Austerlitz, we exchanged the glittering show of the Paysages and the bustling crowds of the Boulevards, for the quiet beauty and fresh verdure of the Jardin des Plantes. Passing through avenues of large Linden trees, trimmed, and presenting the appearance of beautiful green arches, we wound our somewhat devious path among the shrubs and flowers, the well pruned hedges and noble forest trees, that contribute to make up the *tout ensemble* of one of the most interesting objects in the vicinity of Paris. The contrast was indeed striking; we had just left the crowded streets and confusion of the city, and suddenly found ourselves in the midst of quietness. Nature was here in her most varied form, and although we did not quite like her clipped and distorted appearance, yet there was sufficient untrim-

med beauty and varied objects of interest to occupy many days very pleasantly.

This garden was founded by Louis XIII., and its prosperity much advanced by the efforts of Tournefort, Jussieu, and other eminent men. To Buffon, however, it owes its present perfect state, who was appointed its superintendent in 1739. He gathered around him many eminent naturalists, and devoted himself zealously to the interests of the Garden. Owing to the popular belief, that it was used for the culture of medicinal plants, it escaped the destructive excesses of the French Revolution, but was much neglected until Bonaparte's accession to power, when it received a fresh impulse. By a special agreement, it was protected from injury when the allied armies entered Paris in 1815, and since that period it has been continually advancing in prosperity, under the fostering care of the government. It is under the control of the Minister of

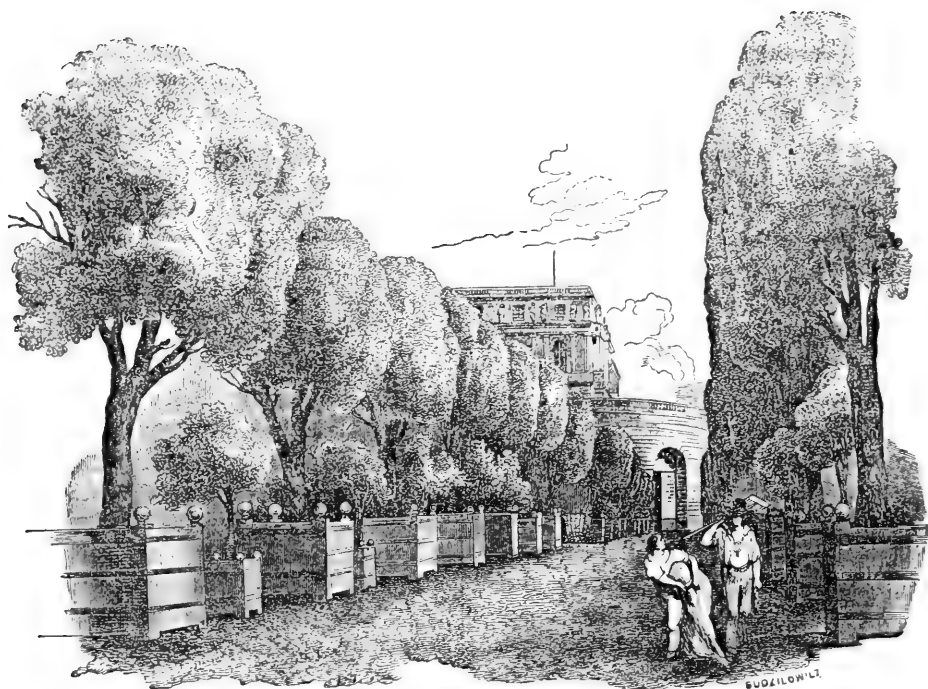


Fig. 33. Entrance Avenue.

the Interior, from whom, or his subordinates, we found it necessary to obtain tickets of admission to the green-houses and galleries. The garden itself is open to all. It is, perhaps, one of the most useful institutions in France, affording unusual facilities to the student of natural science. It includes very complete collections in the various departments of Ornithology, Entomology, Zoology, Mineralogy, Botany, Conchology, Ichthyology, and Geology. There is a fine gallery of Comparative Anatomy, and its anatomical collection is unsurpassed, excepting by that at Florence, which is, perhaps, the most perfect existing. The Menagerie is very extensive, the Botanic Garden is very well arranged, and the houses for exotic plants are large, but not equal to many we saw in England. There is, also, an excellent library of Natural History, and an amphitheatre with

laboratory and apparatus for public lectures on every branch of natural science. These lectures are all gratuitous, and are continued for more than half the year. It is one of the most agreeable features of all these French establishments of instruction, that they are open to all, free of charge. There is nothing of the kind in England, or in this country, and yet if one tenth of the sum expended in the Florida and Mexican wars, had been appropriated to these purposes, it would be difficult to estimate too highly the advantages that would accrue to all classes in this country.

Of the appearance of the garden, we can perhaps give the reader a better conception by describing its details, as they appeared to us in passing through its avenues and winding paths.

On entering the gate at the eastern or Seine end, the eye rests at once upon the

long avenues of noble Linden trees, of which we have before spoken, and whose branches are so skilfully trimmed, as to present to the observer beneath a beautifully arched canopy of living green. In the distance, at the other extremities of these two fine avenues, is seen the cabinet of Natural History. On the left, and along the southern side of the garden, are fine specimens of forest trees of various kinds, the Coniferæ being arranged separately. Immediately in front, and extending the whole length of the garden, are the beds of small plants, arranged botanically, and containing nearly all the known hardy plants for medicinal or domestic use. There is also a sunken space, surrounded by a railing, which presents, at the proper season, a gorgeous display of flowering shrubs. To the right of these, is a range of inclosures, forming part of the School of Botany, and containing a complete botanical collection—some 12,000 species—for the use of students of this branch of natural science. Beyond these, in the same range, are spacious buildings for the geological, mineralogical, and botanical collections. Farther west, is an enclosed space, containing a pomological garden and hotbeds. Behind these, stands a long range of conservatories, the form and contents of which we may detail hereafter. Between two of these is a broad walk, leading to two artificial elevations, one of which is planted with specimens of every known variety of the Coniferæ. The other is called the labyrinth, from its winding path, bordered by close hedges, some six or seven feet high, and ascending to the top where the visitor is glad to rest in a comfortable pavilion with seats. From this point is a very extensive view of the whole garden and the city and country adjacent, and from this point was made the drawing for our engraving, (see frontispiece.) On this mound, near the top, is a granite column, on a pedestal of various minerals—a monument to the memory of DAUBENTON.

Just beneath the labyrinth is a very fine Cedar of Lebanon, apparently older than any we saw in England. It was presented by Collinson to Jussieu in 1734, and now measures about ten feet in circumference, at seven feet from the ground. Near this is an enclosed space containing a lecture room, the botanical gallery and a residence for the Professors. The lecture room is said to hold some twelve hundred persons, while nearly double that number attend some of the various lectures delivered there. Near these buildings is the commencement of the menagerie, which to many visitors is the most attractive part of the garden. The wild beasts are kept in a large building, and are arranged advantageously in dens, with strong bars of iron. They are fed regularly at a certain hour, when there may generally be seen a crowd collected to view the performance. The tame animals are kept in little parks or enclosures, one of which is devoted to each species, and a suitable house or shelter provided for each. In one place will be found camels, zebras and other tropical animals, while in another our North American bison, and various animals from the north of Europe and Asia luxuriate in the comparative freedom which is granted them. The bison, however, the elephant, and the giraffe, are kept much of the time in a large high building, called the rotunda, erected especially for their accommodation. The aviary, or rather *volerie*, contains many varieties of the eagle and vulture, and there are also some very beautiful pheasants, with ostriches, cassowaries, aquatic birds, &c. A crowd is generally collected about the paved pits in which are kept the bears. Each of these is provided with a cell, and

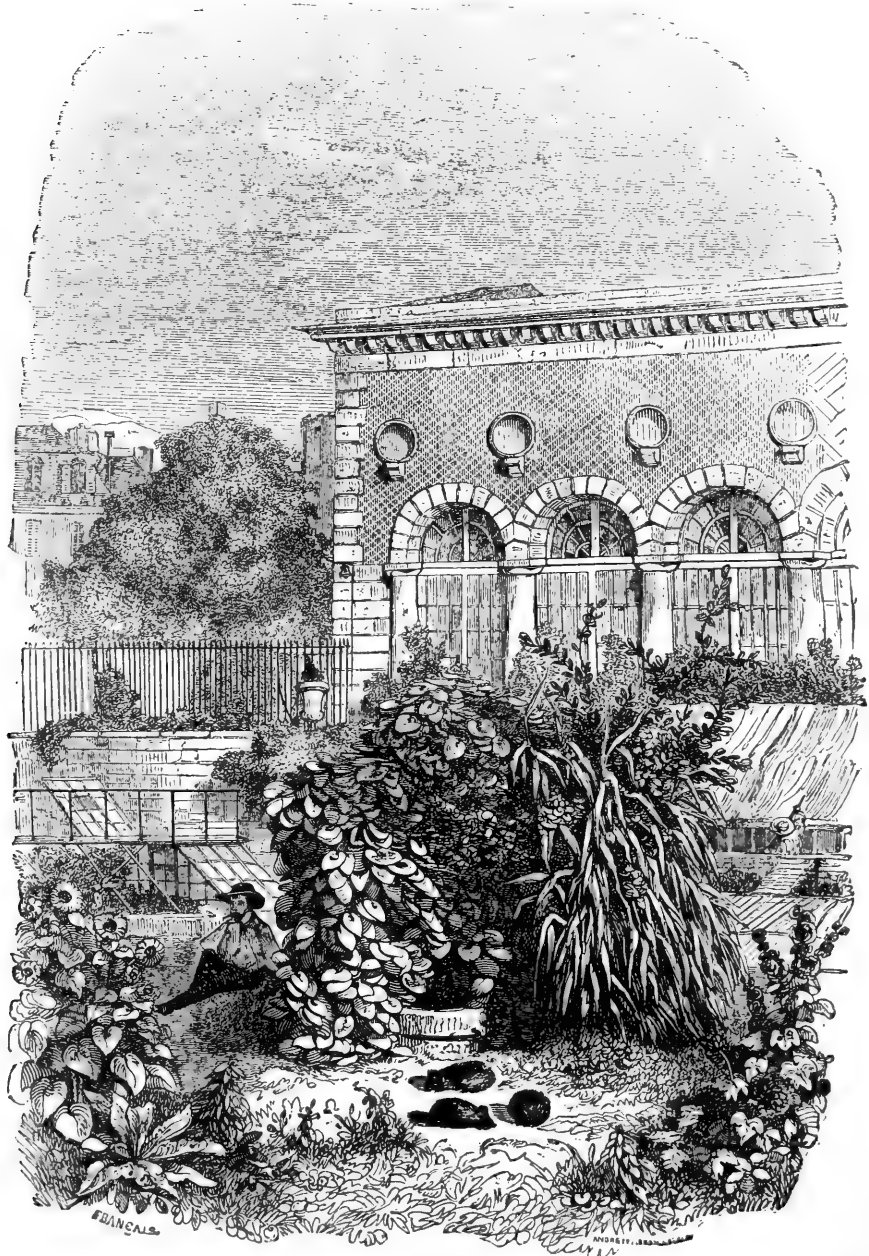


Fig. 35. *The first Green-House erected in the Garden.*

a stake in the pit on which they exhibit their clumsy feats of climbing. The most attractive spot, however, in the whole garden is a stone building, with an immense wire cage in front. In this is kept the simian tribe, commonly called monkeys, and

on a fine day they are all out of their cells, leaping and frisking about the cage, here one hanging by his tail, there another by one leg, and another, of more sedate temperament, sitting with his hands folded in all possible gravity, while in a corner will be seen a couple affectionately saluting each other in Kamskatkan style. But the most amusing part of the scene to me was to witness the delight of the juvenile lookers on, at every antic of these strange caricatures of humanity. The little fellows would fairly scream and caper with delight, and when one more active monkey than the rest would suddenly box his neighbor's ear, or with a nut shell hit another on the nose, their joy could scarcely be contained within

bounds. There is no forced mirth in children, and their ringing laughter was always sufficient to draw me to the monkeys and their play grounds.

This is one of the best arranged zoological collections existing, and offers unusual facilities for studying the natures and habits of animals. They are allowed so much liberty, and are so comfortably cared for in every respect, that the student has many opportunities of seeing them under the most favorable circumstances. There is also a gallery containing a very extensive collection of dead animals, of which, with the various other galleries, we must reserve a description until another number.

L. B. PARSONS.

REVIEW.

LETTERS ON AGRICULTURE, *from His Excellency* GEORGE WASHINGTON, to ARTHUR YOUNG and SIR JOHN SINCLAIR, *etc.* Edited by FRANKLIN KNIGHT. Washington, 1847. Published by the Editor. New-York, Baker & Scribner. 1 vol. quarto, with plates, 198 pp.

FOR a long time, the halo of WASHINGTON'S civil and military glory has kept out of view his extraordinary talent in other directions. Mankind, too, are so reluctant to allow great men the meed of greatness, in more than one sphere of action, that there has, we think, always been a national want of faith regarding the pre-eminence as an agriculturist, to which WASHINGTON is most undeniably entitled.

We are inclined to think that, considering the great disadvantages of the time in which he lived, he was one of the wisest, most successful, and most scientific farmers that America has ever yet produced.

WASHINGTON, as it is well known, was a very large landed proprietor. Before the Revolution, he was one of the most extensive tobacco planters in Virginia. His

crops of this staple, he shipped in his own name, to Liverpool or Bristol, loading the vessels that came up the Potomac, either at Mount Vernon, or some other convenient point. In return, he imported from his agents abroad, improved agricultural implements, and all the better kind of clothing, implements and stores needed in the domestic economy of his estate. During the Revolution, although necessarily absent from Mount Vernon, he endeavored to carry out his plans by frequent and minute directions to his manager there.

No sooner had the war closed, than WASHINGTON immediately retired to his beloved Mount Vernon, and was soon deeply immersed in the cares and pleasures of the life of an extensive landed proprietor. But it was by no means a life of indolent repose, though upon an estate large enough to secure him in the possession of every comfort. The very first year after the war, he directed his attention and his energies to the improvement of the mode of farming

then in vogue in the whole of that part of the country.

He quickly remarked, that the system of the tobacco planters was fast exhausting the lands, and rendering them of little or no value. He entered into correspondence with the most distinguished scientific agriculturists in Great Britain, studied the ablest treatises then extant abroad on that subject, and immediately carried into practice the most valuable principles which he could draw from the soundest theory and practice then known. At a time when the planters were thinking of abandoning their worn-out lands, WASHINGTON began a new and most excellent system of *rotation of crops*, based on a careful examination of the qualities of the soils on his estate, and by substituting grains, grass, and root crops, for tobacco, he soon restored the soil to good condition, and found his income materially increasing, while his neighbors who pursued the old system, were daily growing poorer.

Nothing was more remarkable, among the trials of this great man's character, and nothing contributed more to his success in all he undertook, than the complete manner in which he first mastered his subject, and the exact method in which he afterwards marked out and pursued his plans.

In farming, this was evinced in the thoroughly systematic course of culture which he adopted on his Mount Vernon estate. This estate consisted of about 8000 acres, of which over 2000 acres, divided into five farms, were under cultivation. On his map of this estate, every field was numbered, and in his accompanying agricultural field book, the crops were assigned to each field for several years in advance. So well had he studied the nature of the soils, that with slight subdivisions and experimental deviations, this scientific system of rotation

was pursued with great success, from about 1785 to the close of his life.

After about four years—the most agreeable, doubtless, of his whole life—passed at Mount Vernon, in its improved condition, he was again called, by the spontaneous voice of one people to the Presidency. Much has been said and written about the reluctance of CINCINNATUS to leave his farm, and return to the service of the Roman Republic; but the sources for regret in his position must have been small, compared to those which WASHINGTON felt, when he left Mount Vernon on this occasion. The farm of CINCINNATUS, which has been rendered famous in classical history, was an hereditary allotment of *four acres*, and its cultivation was part of the daily toil of his own hands. Mount Vernon, on the other hand, was one of the largest and loveliest estates in America; it stood amid the rich landscape beauty of the Potomac, its beautiful lawns running down to the river, its serpentine walks of shrubbery, its fruit and flower garden, planted by its master's own hands,* and its broad acres rendered productive by an intelligent and comprehensive system of agriculture of his own construction—think, oh ye who have never thus taken root in the soil, how hard it must have been for WASHINGTON the *Farmer*, to surrender again, even to the flattering wish of a whole nation, the life that he so much loved, for the hard yoke of what he felt to be the most difficult public service!

It is the best proof of how thoroughly devoted by natural taste was WASHINGTON to agriculture, that instead of leaving Mount Vernon to the charge of the excellent

* WASHINGTON's residence exhibited every mark of the cultivated and refined country gentleman. He appears to have had considerable taste in ornamental gardening; he decorated his pleasure grounds with much effect; and his diary shows that he collected and planted a variety of rare trees and shrubs with his own hands, and watched their growth with the greatest interest. He employed skilful gardeners, and pruning was one of his favorite exercises.

agent whom he had well grounded in his own system of practice, and who could no doubt have continued that practice with success, he never lost sight for a moment amid all the pressing cares of public life, of his rural home, or his favorite occupation. We can scarcely give a better idea of the man and his system, than by the following extract, touching this very portion of his life, from SPARKS' admirable biography :

"With his chief manager at Mount Vernon, he left full and minute directions in writing, and exacted from him a weekly report, in which were registered the transactions of each day on all the farms, such as the number of laborers employed, their health or sickness, the kind and quantity of work executed, the progress in planting, sowing or harvesting the fields, the appearance of the crops at various stages of their growth, the effects of the weather on them, and the condition of the horses, cattle and other live stock. By these details, he was made perfectly acquainted with all that was done, and could give his orders with almost as much precision as if he had been on the spot. Once a week, regularly, and sometimes twice, he wrote to the manager, remarking on his report of the preceding week, and giving new directions. These letters frequently extended to two or three sheets, and were always written with his own hand. Such was his laborious exactness, that the letter he sent away was usually transcribed from a rough draft, and a press copy was taken of the transcript, which was carefully filed away with the manager's report, for his future inspection. In this habit, he persevered with unabated diligence, through the whole eight years of his Presidency, except during the short visits he occasionally made to Mount Vernon, at the close of the

sessions of Congress, when his presence could be dispensed with at the seat of government. He, moreover, maintained a large correspondence on Agriculture with gentlemen in Europe and America. His letters to Sir John Sinclair, Arthur Young and Dr. Anderson, have been published, and are well known. *Indeed his thoughts never seemed to flow more freely, nor his pen move more easily, than when he was writing on Agriculture, extolling it as a most attractive pursuit, and describing the pleasure he derived from it, and its superior claims not only on the practical economist, but on the statesman and philanthropist.*"

The volume before us, which Mr. KNIGHT has given to the public, in a very handsome quarto form, consists mainly of the correspondence referred to in the preceding quotation. The letters to Sir JOHN SINCLAIR are rendered more interesting by their being facsimiles, showing the fine bold handwriting of their illustrious author. Besides there is some very interesting collateral correspondence by JEFFERSON, PETERS, and others, throwing additional light on the husbandry of that period. Engraved portraits of GENERAL and MRS. WASHINGTON, views of the mansion at Mount Vernon, a map of the farms, etc., render the volume more complete and elegant.

It is not as conveying instruction to the intelligent agriculturist of the present day, that we commend this work ; for the art and science of farming have made extraordinary progress since this early era in the history of our country. But it is as revealing a most interesting and little known portion of WASHINGTON's life and character, in which his own tastes were more peculiarly gratified, and in which he was no less successful, than in any other phase of his wonderfully great and pure life.

DOMESTIC NOTICES.

THE BEST BUILDING MATERIALS.—Will you be so good as to give us your opinion as to the most proper materials for a dwelling house, where all are equally convenient—whether brick, stone, or wood : 1st. With regard to health : 2d. Cheapness : 3d. Facility and propriety of ornament, with creepers, trees, &c. : 4th. Durability. Yours, *E. Nichols, Walkonding, Ohio.*

ANSWER.—We repeat here, in reply to our correspondent, the following remarks, written by us, and published in the American edition of "*Hints to Young Architects* :—

"Of what materials to build, is one of the first questions to be settled, when the site of the house has been determined upon. In some parts of the country, indeed, the abundance and cheapness of one material, and the scarceness and high cost of others, renders it imperative upon the majority to employ that which is most easily obtained. A large part of the United States is still in this condition, with regard to wood, which, especially in the new States, is still so abundant as to be much the cheapest building material. When it is necessary to build of wood, our advice is, always to choose a style which is rather light, than heavy—in other words, one in which the style and materials are in keeping with each other. It is as false taste to erect a wooden building in a massive and heavy style, which originated in the use of stone, as it would be senseless to build a mock fortification, intended to stand a real siege, whose walls and battlements are of thin pine boards.

"In the Atlantic States, however, a large portion of the better class of houses, erected within the last five years, are of rough hard brick, covered on the exterior with a coat of cement. This affords, on the whole, perhaps, the warmest and driest house in winter, and the coolest in summer, that can be built. The art of stucco-work, or cement plastering the exterior of the walls, formerly badly performed, is now becoming well understood, and when well done, (and more especially when protected by a projecting roof,) it will last, without repair, for twenty or thirty years. On this account it is greatly to be preferred to wood, which requires painting every third or fourth year, to preserve it from decay. Any pleasing, neutral, stone tint may be given to stucco, and thus all the effect of handsome dressed stone obtained, at one-fourth its cost. There is no doubt that, from its many advantages, brick and stucco is destined to become the prevalent mode of building the better class of country houses.

"Where stone of an agreeable color can be obtained, we do not hesitate to give the preference to it. It makes the most solid, substantial, and enduring house, and there is, perhaps, a look of permanence about a fine stone mansion, which no other material ever has. But one would decidedly prefer brick and stucco, for a cottage or dwelling of moderate size, to stone of a cold or gloomy color, such as dark blue limestone, or dark granite. The expression of a cottage or villa of moderate size,

in the country, should, by all means, be that of cheerfulness ; and, when built of a dark stone, it can scarcely fail to be the opposite. Only in a large mansion do we think dark stone can be happily employed for a dwelling house, since there it often adds to the grandeur and dignity of effect.—Some of our lighter freestones, like that of Trinity Church, New-York, and that so much used in Cincinnati, are beautiful building materials, which cannot be too much or too frequently used.

"There is a strong prejudice, we find, in the eastern States, against stone houses, which we think entirely erroneous, and which retards the progress of domestic architecture ; for it is undoubtedly true, that this art advances in proportion as the materials employed possess solidity and permanence. This prejudice has arisen from the bad manner in which the old stone houses of that part of the country were all constructed. There were two errors in their construction ; 1st. The foundation walls were often laid in damp or springy soil, with common lime mortar : 2d. The interior walls were plastered on the solid walls of the house, without *firring*. Now it is impossible, that a house built in this way, should be dry. The moisture of the soil is absorbed by the foundation walls, and is carried up, by capillary attraction, often as high as the second story, and the dampness which the outer walls absorb in long storms, passes through, more or less, to the walls of the rooms. To prevent the former evil, it is only necessary to lay the foundation walls with a mortar composed of cement, or water lime, and sand, instead of the common lime and sand—this effectually prevents all dampness being absorbed or conducted up from the soil itself. To prevent all dampness finding its way from the outside to the inner walls of the rooms, what is technically called "*firring off*," that is, making a hollow space between the lathing and the outer walls, is a most effectual and simple remedy."

To the foregoing we will here add, that the health of a dwelling depends almost entirely on the dryness of the walls, and the foregoing will show how stone or brick walls may be rendered perfectly dry at all seasons.

As regards "facility and propriety of ornament with creepers, &c.," that is a question which relates more to the *style* than the *materials* of a dwelling. The more rural styles, such as the English cottage, the Swiss, and the Bracketted Italian, allow, and indeed almost require the support of the richest accessories of climbing plants, and all the intricacies of trees and shrubbery. The more highly finished classical modes, on the other hand, may be surrounded by trees, but are seldom improved by any portions of the edifices themselves being hidden by vines and creepers.

Stone walls, or brick walls, (the latter of course painted with some soft agreeable color,) are much better adapted to the growth of such plants as the Ivy, Virginia Creeper, &c., than any others, since wooden structures are more liable to be injured by

the growth of creepers upon them, than those built of solid materials.

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LARGE CHESTNUTS.—We are indebted to D. Tomlinson, Esq., of Schenectady, for a sample of some *native Chestnuts*, of very large size, which we have planted, in the hope of producing still larger varieties. Our native nuts have hitherto been kept entirely without the pale of horticultural improvement. There is no doubt whatever, that the size of our Hickorynuts, Chestnuts, Butternuts, &c., may be doubled, and their flavor greatly improved, by selecting and planting the largest and finest seeds of such native specimens as are most remarkable for their qualities; and certainly fruits so valuable in their wild state, are worthy of some attention by the arboriculturist, and the originator of new fruits.

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STRAWBERRIES.—*Dear Sir:*—The writer of the article on this subject in your last, (*Wm. W. Valk*), has never inspected my strawberry grounds, and there is no other garden in which my rarest varieties can be found. I will therefore simply add to my previous remarks, that the two Secretaries of the Long Island Horticultural Society, who are highly respectable and honorable men, have very frequently overlooked, with me, the various new and estimable varieties of Strawberries, and if my communications are not invariably correct, I call upon them to controvert me. I have no wish (unless in responding to attacks,) to trespass on the patience of your readers, except when I have something interesting to communicate. *Wm. R. Prince, Flushing, L. I., Oct. 15, 1847.*

.....

QUERIES ON HEDGES.—In your editorial for the June number of the Horticulturist, you recommend the Cedar of Lebanon, as being worthy of cultivation in this part of the United States. In an ornamental point of view, it no doubt possesses all the merits you claim for it, but I wish to inquire if it also has the *everlasting* property of our common Red Cedar—in short, whether its timber would make posts as durable as those of the Red Cedar, (*Juniperus virginiana*.)

If it possesses this important requisite, I should suppose it would be worthy of cultivation for its timber alone, as its large growth would supply the important desideratum (wanting in the Red Cedar) of furnishing logs large enough to make timber suitable for any purpose. (a)

A word about hedges. In this vicinity, the Red Cedar grows naturally, and from its thick habit of growth, branching out near the ground, and the stiffness of its timber, I have thought that it might be successfully used for hedges. Have you any experience on the subject? The only thing I should fear would be, that it would be browsed by cattle, or would the peculiar pungent taste of its foliage prevent this? (b)

After reading your "Chapter on Hedges," I last spring procured from the east 1000 Buckthorn plants, seedlings of one year's growth. The hedge was planted after your direction, and the plants have grown remarkably, some of them being now two feet high, though cut off within an inch of the

ground at the time of planting. But as yet they are by no means in good condition to go into battle, being totally without armour of any description.—Not a thorn, prickle, nor point of any kind, has yet made its appearance. Will age increase their ferocity, as it does that of some animals? and if so, how long before I may expect them to begin to show fight? It is said that the medical properties of this plant, will prevent mice from eating its bark. Will the same cause prevent cattle from browsing its foliage? (c) Yours. *A Subscriber in Ontario Co. Sept. 29, 1847.*

(a) Though the timber of the Cedar of Lebanon was very highly esteemed by the ancients, it does not possess the durability of the American Red Cedar.

(b) There are miles of Red Cedar hedges on Long Island, and in some parts of Pennsylvania. The farmers there make a rude hedge by *plashing*, or interweaving it, and it is very permanent. But it is only when regularly sheared, or trimmed, like the thorn, that the Red Cedar makes a satisfactory hedge. There is a fine example of this in the nursery of Mr. JAS. WILSON, near Albany, where a specimen of the Red Cedar hedge may be seen, as nearly perfect as any thing of the kind well can be.

(c) The thorns of the Buckthorn are produced at the end of the shoots, and are not much developed till the hedge has three or four years of growth, when they are sufficiently numerous; trimming the hedge increases their number and protective qualities every year.

Cattle will not browse upon either the Buckthorn or the Red Cedar.—ED.

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CINCHONIA, OR PERUVIAN BARK.—The preparation of this bark, sulphate of quinia, is used more extensively in the various grades of intermittent fevers, in the west, than all other remedies, and it is a most costly one, and often difficult to procure.—Can quinia not be obtained from some shrub or plant native to this country, and at less expense? A shrub here called *wahhoo*, I know not its botanic name, is the best known substitute for quinia. It has an unusually thick liber, of great strength, and seems to be equally effective in the same diseases, and requiring less dose, than of Peruvian bark, but greater than of quinia. The next best substitute is Boneset, (*Eupatorium perfoliatum*.) It seems to me highly probable one of these, or some other native plant, would supply this highly important article in abundance. Are there not among your readers scientific gentlemen, who for the good of their country and the relief of the suffering, or the love of gain, can be induced to experiment on this matter? *E. N. Walhonding, Ohio.*

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POMOLOGICAL NOTES FROM RHODE-ISLAND.—Yesterday I sent you the *Wescott* pear. There were sent four specimens of this fruit exhibited at our annual shows, all of which were slightly too ripe, so that its quality could not be so fairly tested by them as desired. I send you a description and outline of the Abbott Seedling. I regret that we could not furnish you a specimen of the fruit, but we had not a single one to spare. These two varieties are, in our opinion, of first rate excellence,

and surpassed by but few, ripening at or near the same period. I also send you specimens of the Esten apple, which we believe to be worthy of cultivation.* Its flavor is so mild and agreeable as to lead to some difference of opinion whether it should be called a sweet or acid fruit. The following is a description of the

Trescott Pear.—Originated on the farm of Niles Trescott, in Cranston, R. I. Fruit medium size, roundish obovate, in some specimens a little flattened laterally; surface even; skin pale green when fully grown, becoming a light orange yellow as it ripens, covered with minute gray dots, with occasional cinnamon russet blotches; stem from an inch and a half to two inches long, slender, bent, and inserted by a fleshy nob in a very slight depression; calyx large, open, and placed in a slightly plated basin. Flesh white, very fine grained, melting, juicy, with a pleasant saccharine flavor. It ripens from the middle to the last of September.

Abbott Pear.—Originated in Providence, R. I., from seed planted by Mrs. Thomas Abbott. Fruit medium size, oblong obovate, resembling in form the Washington pear; surface even; skin smooth, dark green, with a reddish brown cheek, changing as the fruit matures to a bright scarlet; stem about an inch in length, moderately stout and slightly curved, inserted in a very slight depression; calyx small, closed, and placed in a shallow basin; flesh melting, sprightly and very saccharine. It ripens from the middle to the last of September.

Esten Apple.—Presumed to have originated in Burrilville, R. I., on the farm of Judge Esten. Fruit large, oblong, tapering roundly to the eye, and slightly ribbed; skin smooth, of a lemon color, with an occasional blush, dotted with large green and red dots; the stem slender, an inch in length, inserted in a very deep cavity; calyx closed, plated, and set in a shallow basin; flesh white, fine grained, mild, with a pleasant champagne flavor. It ripens from October to January.

The tree is extremely vigorous and very productive, with light brown smooth shoots.

L. C. EATON,

Chairman of the Committee upon Fruits,
R. I. Horticultural Society.

Providence, Oct. 1st, 1847.

THE DRUID HILL PEACH.—This fine late fruit was originated by L. N. ROGERS, Esq., of Druid Hill, near Baltimore, and was first described and made known in our *Fruits and Fruit Trees*. Mr. ROGERS also sent us buds of this variety, which were propagated and disseminated in various parts of the country.

From the fact that the trees grown from these buds bore leaves with *globose* glands and not with *reniform* glands, as stated in our published description, we entertained doubts of the correctness of the sort. Our description was prepared from fruit and leaves sent us when we first named the variety, "from the original tree." And subsequently, when we communicated our doubts of the correctness of

the sort sent us under this name, to Mr. ROGERS, he sent us leaves for comparison. In both those cases the leaves bore large well marked *reniform* glands. On soliciting buds again this season, from trees of the genuine sort, we received from Mr. ROGERS the same variety originally sent us, viz. that with *globose* glands. And having called Mr. R.'s attention particularly to this fact, he ascertained that *leaves* had been sent us by mistake from trees in an adjoining row, but that the buds were of the true sort.

In this state of doubt we naturally looked for the ripening of some fruit on one of the trees here, of the stock in our possession, with no little anxiety.

We are glad to be able to say, on examining and tasting four specimens (one of them measuring nine inches in circumference) that the buds and trees we received from Mr. ROGERS with *globose* glands are all the true *Druid Hill* peach. And a very delicious, high flavored fruit it is—certainly one of the very finest of late freestones. The description in our work is perfectly correct, in all respects except that the leaves have *globose* glands—and correspondents to whom we sent it will be glad to know that they have not lost a couple of seasons in cultivating this most excellent variety.

BOTTLING INSECTS.—We have seen in the nursery of Mr. S. Pond, of Cambridgeport, the plan adopted with success which was recommended in the *Cultivator* of June 6th. In many trees common glass bottles were hung in the trees, and filled to their necks with sweetened water, and it proved to be an excellent and convenient mode of destroying insects, &c., for the bottles were generally well filled with various kinds of insects, such as beetles, millers, wasps, hornets, bees, bugs, flies, and various other *varmints* of divers sorts, sizes, ages, colors, &c.

Enough would be caught in a few days to furnish an entomologist of common industry with subjects for investigation during a long life. This mode of destruction is so easy and sure, that if generally pursued, it must rid the world of many depredators so as to greatly reduce their numbers. Mr. P. observes that since he practiced this plan, flies and other insects have become more scarce about the house.

We noticed one important fact in regard to these bottles. Those that were of dark colored glass had no insects in them, while the clear transparent bottles were nearly full. Sometimes bottles become so full in a few days, that it is necessary to empty them.

Mr. Ives catches a great many in his garden by hanging pitchers up in trees, filled about half or two thirds full of sweetened water. When hung upright the insects do not get in; but when hung by the handle, about at an angle of 45 degrees the plan is successful. *Boston Cultivator*.

A NEW CHERRY.—My neighbor, ZERA BURR, well known for his fine collection of fruits, has originated a cherry, which is, in my estimation, quite superior to most of the kinds now under cultivation. Unlike many new kinds, it is essentially distinct in

* [By some accident these specimens had not reached us when we sent this to press.—Ed.]

appearance, and is in season a little after several of the best are leaving us. We have compared it with most of the well established varieties, and without hesitation put it in the same class with the Elton, Bigarreau, Black Eagle, etc. It is the handsomest growing tree in my collection.

Seeds of the China Bigarreau, and Black Heart, were sown several years since, and this is the product of one of them. It bears a considerable resemblance to the former. It has borne for three years, and its brilliant appearance on the tree is very attractive.

Fruit large, obtuse heart-shaped; suture line distinct. Skin thin, white, pellucid in the shade, beautifully spotted with carmine dots, gradually deepening into brilliant red on the sunny side, with marblings of darker red; and speckled with numerous lighter spots.

Fig. 36. *Burr's Seedling*—when fully ripe. Stalk slender, about two inches in length, in a broad and shallow cavity. Flesh white, tender, and juicy, with a sweet, lively and delicate flavor. Ripe this season about the first of 7th mo. (July.) Growth remarkably stout and vigorous. It is a Bigarreau.* *W. R. Smith. Macedon, Oct. 1847.*

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NOTES ON STRAWBERRIES.—*Mr. Downing*: I was gratified to discover in your number for the present month, an article on the strawberry, from one who claims to be so experienced a horticulturist as *Mr. Prince*. But my disappointment was great, on reading his article, to find it abounding in errors. They cast a shade of doubt over those parts of his article, of which I had no knowledge. He says the *Eberlin* strawberry is pistillate. This is a new western seedling, of which he can know nothing. This is the first season it has been distributed, as far as I am informed, and of its size and bearing quality, we are yet unable to speak. One thing is certain, it is not pistillate. At first view, it would be pronounced a common staminate. But on a close examination, it will be found to possess the peculiar character of the *Duke of Kent*—that of having a few blossoms purely pistillate, and wholly defective in stamens, on the same stems with Staminate, and perfect flowers. This peculiar character, may make it a valuable variety to cultivate with pistillates. The *Hudson*, he represents as staminate and pistillate, and very productive. *Mr. Buist*, *Mr. Carr*, and other horticulturists about Philadelphia, will be surprised at this. They have cultivated it for more than half of a century, in that vicinity, more extensively than all other kinds united; and now say, that it is entirely

defective in stamens. The *Iowa* he represents as productive. We profess to know more of this plant, than any eastern horticulturist, as it is a wild plant of the west. It is among the finest of the staminates, but will, under the best cultivation not average one-fifth of a crop of perfect fruit.—The *Alice Maude*, *Buist Prize*, and *Boston Pine*, he represents as yielding a fair crop. We have given them a fair trial, and do not find them to equal the *Iowa*. The *Duke of Kent*, in imitation of some English writer, he pronounces worthless. I observe a celebrated horticulturist in New-York city, gives it a different character. We agree with him in opinion. It has the peculiar character of bearing perfect, and staminate and pistillate blossoms on the same stem. The fruit is small, but of fine quality. Is a good bearer, and comes in early. It can easily be distinguished by the stem and leaf from all the valuable pistillate varieties, and is on this account the most valuable to plant for inapregnation.

He pronounces the *Ross Phoenix* and *Swainstone's Seedling*, barren and worthless. I cannot agree with you that they are full bearers, or will even average one fourth of a crop of perfect fruit; but I certainly deem them as good bearers as his *Iowa*, *Alice Maude*, *Primate*, *Prince Albert*, and *Unique*; the three latter of which he particularly represents as perfect bloomers, producing abundant crops of large perfect fruit. I shall believe he has spoken hastily, until he claims, and proves himself entitled to the premium of \$500, which I saw offered for such a plant. If entitled to the character he gives them, they would be an object of great interest, and you cannot do your subscribers a greater favor, than by favoring them with your experience. We have found no English staminate, that will average one-fourth of a crop of large and perfect fruit; not even excepting their celebrated *Keen's Seedling* and *British Queen*; and are not without hope that English horticulturists will give light on the subject. *A Subscriber. Nashville, Tenn., Sept. 15, 1847.*

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HOUGHTON'S GOOSEBERRY.—*Dear Sir*—I have been expecting a private opportunity to forward you, ere this, a box of Gooseberries, of the best variety I have ever seen. It is so desirable a sort, that I could not well refrain from forwarding a sample, as I now do, by express. I regret that the specimens are only the gleanings of four bushes, my whole stock of this kind. This Gooseberry is a seedling, called here *Houghton's*. It, I have no doubt, was raised from seed from our native Gooseberry. Its leaf, as you will perceive by the enclosed shoot, bears evidence of this origin. This is the only Gooseberry cultivated, that does not mildew under any circumstances. The cultivators in Lynn, Mass., where this fruit originated, have grown it for three or four years, and their testimony accords with my assertion. The growth is exceedingly thrifty, making long pendant shoots, similar to an English variety called "Crown Bob." I have nineteen table varieties, received four years since from Cunningham & Sons, Liverpool, and for my taste, *Houghton's Seedling* surpasses them all, notwithstanding the fruit is not so large as the European varieties. Most of the fruit I now send

* [If the flesh is tender it can not be a *Bigarreau*. We trust *Mr. Smith* will send specimens to the fruit committee of some leading society, and to us, next season, that its merits may be authentically spoken of.—Ed.]

you, were taken from shoots grown within one inch of the soil. I have picked at least ten quarts of fruit from four bushes, which were layers two years since.

I think that the *Houghton's Seedling* will supplant almost every foreign variety from our soil. The long shoots which spring from the bottom of the stock, often take root themselves. It will be a fine variety for training, as it makes long shoots, and fruits prodigiously, even to the extreme end of the previous year's growth. Yours very truly, in haste. *John M. Ives. Salem Aug. 15, 1847.*

[If this is a seedling from an indigenous Gooseberry, as it appears to be, and one which, being entirely adapted to our climate—never mildews, it deserves attention. We regret the berries were heated before they reached us, so that we could not judge of their flavor.—ED.]

HORTICULTURAL SOCIETY OF THE VALLEY OF THE GENESSEE.—*Report of the Committee on Flowers.*—Having spent the short time allowed them in their examination of the various specimens presented, they were agreed as to those who had presented the greatest variety of choice flowers, and also those who had arranged them with the greatest taste; but as many of those choice collections were not made up of annuals, and as they were bound to make their report in accordance with the published regulations, it was more difficult to arrive at satisfactory conclusions.

By the fourth article of the regulations, it is directed that "all articles entered for competition shall be labelled with their name and the name of their producer, and no specimen incorrectly named shall be entitled to any premium."

Again, by the fifth article of the regulations, it is directed "Nurserymen are to compete in a class by themselves, except for floral ornaments and green-house plants, and diplomas shall be awarded the successful competitors with the above exceptions."

Ladies' List, for the best Display of Annuals during the season.—Mrs. S. G. Crane, of Rochester, presented eighty-three varieties of annuals—first premium.

Mrs. Blythe, of Rochester, presented fifty-three varieties, all correctly named. As these were done up and exhibited with taste, we consider her entitled to the second premium.

Mrs. L. C. Fitch presented her list, thirty-one names, yet these were mostly generic, including many varieties.

Mrs. J. W. Bissell presented one hundred and thirty-six varieties of annuals, twenty varieties of perennial Phlox, and twenty varieties of other perennial flowers, arranged in pyramids and bouquets with much taste.

Mrs. G. Elwanger presented one hundred and twenty-three varieties of choice annuals, together with many perennials.

Miss Hooker presented fifty-five varieties of annuals all beautifully arranged.

Mrs. John Williams presented thirty varieties of Dahlias, all of the choicest varieties, which were so arranged as to call forth the admiration of all who examined them. We doubt whether there

was ever a finer display of this beautiful flower in Western New-York, and the collection did much toward giving character to the fair.

Mrs. Lewis exhibited thirty varieties of Dahlias, all very fine, but her collection lacked a few of recent introduction, which were included in Mrs. Williams' collection, but they were tastefully arranged, and did honor to the donor.

Messrs. Elwanger & Barry presented seventy-two most splendid varieties of Dahlias, including all the leading varieties, many of which surpassed in richness of colour any ever before exhibited at our previous meetings. They also presented a large assortment of Roses, all of the choicest varieties. We were not furnished with the number or their names, which was perhaps owing to the short time allowed to the committee for their examination.

Wm. King presented thirty-three varieties of Dahlias which was one of the choicest collections at the fair. His collection of Dahlias, and his floral ornaments were much admired. There are few of our florists who cultivate with more taste than Mr. King. Mrs. King presented some fine bouquets and cut flowers, many of which were very beautiful.

Miss S. Shaw presented five bouquets of cut flowers, tastefully arranged.

Miss L. J. Whitney, one hundred and forty-two varieties of annuals, not named.

Mrs. Chappell, two pyramids.

Miss M. T. Uttley, Mrs. J. W. Johnson, Mrs. J. F. Bush, Miss A. Fitch, N. W. Whitby, J. P. Fogg, Miss S. R. Gould, Mrs. Rapelje, Mrs. H. N. Langworthy, Mrs. B. F. Smith, Mrs. I. Belden, fine varieties, but no list.

Mrs. Billings, a splendid artificial bouquet.

Mrs. Louis Chapin, two splendid shell bouquets.

Mrs. Billings, a splendid collection of Pansies.

L. Wetherell, one hundred and fifty species of wild flowers.

A splendid case of wax flowers was exhibited without a name.

Wm. King, a splendid collection of green-house plants; Messrs. Elwanger and Barry, a fine display of green-house plants; but as these were for the season, the committee did not decide upon them.

PREMIUMS.—The Committee awarded the following premiums:

Native Flowers.—L. Wetherell, one hundred and fifty species, first premium, \$8.

Ladies' List—Annuals.—Mrs. S. G. Crane, first best display during the season, \$15.

Mrs. E. K. Blythe, second best display during the season, \$10.

Decorations.—Messrs. Elwanger & Barry, first best floral ornament, \$5.

Wm. King, second best do., \$3.

Mrs. Billings, third best do., \$1.

Bouquets.—Miss L. J. Whitney, first best table bouquets, \$3.

Mrs. Wm. King, second best do., \$2.

Mrs. J. W. Bissell, third best do., \$1.

Miss S. Shaw, first best hand bouquets, \$3.

Miss Hooker, second best, \$2.

Mrs. Wm. King, third best, \$1.

Mrs. Billings, Pansies, \$1.

Discretionary Premiums.—Miss L. J. Whitney, for the best display of flowers without list, \$15.

Mrs. L. C. Fitch, for thirty-one species not including varieties, \$5.

Mrs. E. Atkinson, Mrs. R. Sterling,
Mrs. M. Wright, F. Brown, J. H.
Watts, N. Goodsell, Committee.

Report of the Committee on Fruits.—The following list of fruits entered for competition or exhibition, is pretty nearly correct, although in consequence of some misunderstanding about the time we were to make our examination, some collections were presented too late, and were thus deprived of premiums, to which they might have been entitled, had they arrived at an earlier hour.

N. Hayward, thirty-four varieties of Apples, three of Peaches, one of Quinces, one of Grapes. These were very fine specimens, and received two of the premiums offered by the Agricultural Society.

Freeman Clark, twenty-six varieties of Apples. A good collection, but not named.

Samuel Briggs, forty varieties of Apples, eight of Pears.

R. H. Brown, ten varieties of Apples, three of Grapes.

H. N. Langworthy, twelve varieties of Apples, five of Peaches, one of Grapes, three of Pears.

Wm. Shephard, twenty-two varieties of Apples, four of Peaches.

H. Hooker, twenty-one varieties of Apples, two of Peaches, three of Grapes.

T. B. Hamilton, Isabella Grapes.

I. Belden, Isabella Grapes, and two varieties of Siberian Crab.

J. Frazer, three varieties of Apples, very perfect specimens.

Mrs. J. L. D. Mathies, Isabella Grapes.

E. K. Blythe, the same.

P. W. Van Alstyne, one plate Peaches.

P. Kearney, one basket Quinces.

G. W. Burbank, the same.

G. W. Currier, Isabella Grapes, and Summer Bon Chretien Pears, very large.

D. Bowen, one plate Peaches, and one basket of Quinces.

R. Damon, one plate of Apples.

N. N. Treat, the same.

M. Morton, the same.

J. H. Thompson, one plate of Apples—Peck's Pleasant.

M. B. Seward, one plate of Apples—Hawley.

M. Chapin, two varieties of pears.

Z. Cornell, by Z. O. Nelson, a large basket of Miller's Burgundy Grapes.

L. A. Ward, sixteen varieties of Pears.

J. H. Watts, two varieties of Pears.

P. Rosecrantz, one plate Peaches.

E. Bush, two plates of Peaches, and two Grapes.

H. P. Norton, two plates Peaches, three of Apples, and one of Pears.

C. F. Crosman, one plate Grapes, and one of Plums.

J. C. Campbell, Violet Nectarines.

J. H. Watts, Black Hamburg and St. Peter's Grapes, grown under glass at Boston.

NURSERYMEN.—Elwanger and Barry, Mount Hope Garden and Nurseries, forty-seven varieties of Apples, forty-two of Pears, nineteen of Peaches,

three of Crab Apples, Spanish Chestnuts and Madeira nuts.

Powis and Goodsell, Monroe Nurseries, nineteen varieties of Apples, and three of Peaches.

Samuel Moulson, Rochester Nursery, fifteen varieties Apples.

Bissell, Hooker and Sloane, Commercial Nursery, twenty-four varieties of Apples, and three of Peaches.

Hall Colby, seven varieties of Apples, among which were the St. Lawrence and Red Canada, very handsome specimens; and four varieties of Peaches and one of Grapes.

W. B. Wilcox, three varieties of Apples.

Premiums awarded.—Apples.—Greatest variety and best grown, H. Hooker.

Second best ditto, S. Briggs.

Third ditto, W. Shepard.

Best fall Apple, the St. Lawrence, H. N. Langworthy.

Second best ditto, the Hawley, M. B. Seward.

Pears.—First premium, L. A. Ward.

Second premium, W. Shepard.

Grapes.—Greatest number of varieties, R. C. Brown.

Best dozen bunches, T. B. Hamilton.

Best single bunch, Mrs. Mathies.

Second best ditto, G. W. Currier.

Quinces.—Best dozen, P. Kearney.

Watermelons.—Imperial, J. Donallen.

Second, Spanish, H. N. Langworthy.

Muskmelons.—Best, J. Donallen.

NURSERYMEN.—Best display of Apples, Pears, and Peaches, Elwanger and Barry, a Diploma.

The Dyer Apple presented by Messrs. Elwanger and Barry, merited more attention than most of the Autumn Apples, being a variety lately introduced here, certainly equal to any autumn apple in fine flavor and richness, and superior to most of the apples presented.

S. Moulson, S. Miller & J. W. Bissell,
Committee.

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WORCESTER (MASS.) HORTICULTURAL SOCIETY.—The annual exhibition of this Society, was held at Worcester, on the 23d of September. Of the Reports, we have received only the one on Fruits, by Mr. S. H. COLTON, from which it appears that the show of Fruits was very extensive, the number of contributions amounting to 134. We give the following extracts from the Report :

"It cannot but be gratifying to all who take any interest in horticultural pursuits, to witness the constant and rapidly increasing collections of valuable fruits in our midst; evincing good proof of skillful cultivation, and correct taste and good judgment, in selecting those varieties which are best suited to our soil and climate. No further evidence of this need be adduced, than a comparison of the exhibition which has just taken place, with those of former years. With a very few exceptions, all the fruit exhibited this year, was grown in this county; while heretofore, our show has been in part made up by contributions from cultivators abroad.

Although, owing to their scarcity, the show of Apples was not quite equal to some former exhibi-

bitions, and fears of a failure in that department were entertained by some, yet, taken altogether, the show of fruit this year, far exceeded that of any former season; and probably a better collection of *all* the fruits of the season, was never before exhibited in New England.

The Committee regretted that the time of holding the exhibition was fixed for so short a period; as no doubt many persons who would be glad to attend it, could not conveniently do so during the short time it was open. It is hoped that *two* days, at least, will hereafter be devoted to that purpose.

But, although the exhibition was open to the public only one day and two evenings, yet nearly *three thousand* persons visited it; evincing pretty conclusive evidence of the interest our community feel in the subject.

Notwithstanding the hall was constantly thronged with visitors, and many hundreds of samples of beautiful and tempting fruit, within reach of every one, yet all seemed to feel and act as if it was placed there to be examined with the eye only. No instance of pilfering, and but little unnecessary handling the fruit was known to occur. The Committee think it speaks well for our community, and they take pleasure in making this statement, being so widely different from the custom in some places, where the fruit has to be put beyond reach to ensure its safety from being purloined."

As no premiums are awarded by the Society (although it is to be hoped its funds will soon warrant it,) the committee are happily excused from expressing much opinion upon the respective merits of the fruits exhibited; and they have, therefore, particularized but very few. It was no doubt apparent to all, that there seemed to be more uniformity than usual in the size and appearance of the varieties shown; and, with a few exceptions, no person exhibited samples much superior to those presented by others, nearly all were fair, and of handsome appearance.

But few new seedling varieties of fruit were offered for exhibition, which are worthy of particular notice. A fine seedling peach, of a light delicate colour and good flavor, raised by L. Cheney of Southbridge; and a good and handsome yellow variety, raised by D. D. Prescott of West Boylston, the Committee judged were of first quality, and worthy of general culture. Several kinds of native grapes were exhibited, but the committee did not discover that they possessed sufficient merit to warrant their recommending them, excepting the variety called the "Fitchburg," shown by S. H. Colton of Worcester, and the "Blackstone," by Hiram Wing of Northbridge, both of which are good and desirable sorts.

It is much to be regretted that more attention is not paid by cultivators to ascertaining the true name of all their varieties of fruit exhibited; and although there has been some improvement in this particular from former years, yet many fanciful and outlandish names are often retained year after year, notwithstanding the true one may have been before given.

In conclusion, the committee cannot but express the hope that there may be no relaxation in the effort to maintain our present high reputation as a

fruit growing community. Probably in no part of the country is the climate and soil better adapted than ours to raising in perfection all the useful and valuable varieties; and with a reasonable care of our trees, we are usually rewarded with a bountiful crop of good fruit.

ST. LOUIS HORTICULTURAL SOCIETY—*Fall Exhibition*.—The Society met pursuant to adjournment, at the Laclede Saloon, on Wednesday, the 15th day of September, at 10 A. M. THOMAS ALLEN, President, in the Chair.

The large saloon was well filled with a choice variety of rare and excellent products, from contributors residing in Missouri and Illinois. The exhibition of Fruits was large, varied, and highly interesting. The specimens of Apples, Peaches, Pears, Quinces, and Grapes, evinced a high state of culture, and commendable attention on the part of the cultivators, in the improvement of their fruits, by the selection of the best and choicest varieties, and those most adapted to stand, and improve, in this soil and climate. The exhibition of Vegetables was also large and varied, and proved beyond cavil, the fact, that with proper cultivation and attention, the soil and climate of this section is capable of producing to an unusual size, whilst the flavor is preserved, and the nutritiousness increased. The exhibition of Flowers and Plants, although not so large as at the last exhibition, was rich in variety and rareness.

Report on Fruits.—The Committee on Fruits, having carefully examined all the different parcels and varieties of fruits exhibited for inspection, proceeded to make and submit the following award of prizes, and accompanying remarks:

1st Prize of a Silver Cup, worth \$10, for the greatest and best variety of Fruits, awarded to Capt. Lewis Bissell, who exhibited sixty-three varieties of grafted *Apples*, many of them very fine; twenty-nine varieties of *Pears*, most of them good varieties and fair fruit; two varieties of *Quinces*; four varieties of *Peaches*; one of *Grapes*, and one of *Damsons*, all good fruit. Among the varieties of apples are the Roxbury Russet, Golden Pippin, White Belle Flower, Rhode Island Greening, Green Newtown Pippin, Rambo, Romanite, York Pippin, Newark Pippin, Jenneting, Esopus Spitzenburg, Golden Russet, Jornting Pippin, Jonathan, Green Pippin, Late Queen, Taylor's Pippin, Baldwin, and many others of fine varieties and excellent fruit.

2d Prize, a Silver Cream Ladle, worth \$3, for the second best variety of Fruits, awarded to Thomas Allen, Esq., who exhibited three varieties of *Grapes*, the Catawba, the Isabella, and a native grape; ten varieties of *Peaches*; the Heath Peach, the White Cling, the Large White Cling, (a seedling,) Apricot Peach, a Large Yellow Peach, a fine free stone called Crystal Spring Peach, two good free stone peaches, names not known, and several other good varieties, included in his catalogue, herewith submitted, making the ten varieties above mentioned, mostly very fine and fair fruit. Two varieties of *Pears*; three varieties of *Quinces*; and twenty-three varieties of *Apples*, among which are the Golden Pippin, Fall Pippin, Newtown Pippin, the Spotted, Newark and Long Pippin, two

varieties of Spitzenburg, Rambo, Romanite, Rhode Island Greening, Yellow Belle Flower, Jonathan, Hughes' Crab, and many others, making in all the twenty-three varieties, mostly good.

3d Prize, a Silver Cream Ladle, worth \$4, for the greatest and best variety of *Peaches*, awarded to Thomas Allen, Esq., who exhibited ten varieties of fine peaches, as described above.

4th Prize, a Silver Fruit Knife, worth \$2, for the second best variety of *Peaches*, awarded to Mr. A. A. Hillard, of Illinois, who exhibited eight varieties of *Peaches*; the Old Mixon Cling, Monstrous Pompon, Morris, Atwood's White Heath, Black Hawk, latest of all, Mexican, and Catharine, all fine fruit.

5th Prize, a Pair of Silver Butter Knives, worth \$4, for the greatest and best variety of *Pears*, awarded to Capt. Lewis Bissell, who exhibited twenty-nine varieties of *Pears*, mostly very fine fruit; among them are the Bartlet, Napoleon, Seckel, Pound Pear, Beurre de Aremburg, Cuisse Madame, Summer Bergamot, and many others, making the twenty-nine varieties.

6th Prize, a Silver Fruit Knife, worth \$2, for the second best variety of *Pears*, awarded to Mr. E. Mallinkrodt, who exhibited fifteen varieties. The Beurre Belgique, Saint Johns, Beurre Napoleon, February pear, Beurre Diel, Cinnamon pear, German Sugar pear, Beurre d'hiver, Spice pear, Beurre Blanc, Bergamotte d'hiver, Bergamotte d'Automne, Rouge Saint Poire, Beurre Poire Jaune, all fine fruit.

7th Prize, a pair of Silver Butter Knives, \$4, for the greatest and best variety of *Apples*, awarded to Geo. W. Sullivan, who exhibited twenty-eight varieties, among which are the Pound Pippin, Golden Pippin, Newark Pippin, Spice Pippin, Long Green Pippin, Newark King, Belle Flower, Prior's Red Jennett, Codling, French Jennett, Priestly, Hughes' Crab, Maiden's Blush, Late Queen, and many other excellent varieties, and the fruit very fine.

8th Prize, a Silver Fruit Knife, \$2, for the second best variety of *Apples*, awarded to Captain H. M. Shreve, who exhibited fifty varieties, among which are the New-York Gloria Mundi, Danver's Sweeting, Holland Pippin, Newtown Pippin, Ortle, Peck's Pleasant, Red Winter Pennock, Golden Russet, Jersey Black, Belle Flower, Christmas Pippin, Pryor's Red, Padley's Pippin, Long Green, Golden Pippin, Rhode Island Greening, and many others as per Captain Shreve's catalogue, many of them are fine fruit, making the fifty varieties.

9th Prize, for the greatest and best variety of *Grapes*, a set of Silver Tea Spoons, \$6, to Mr. Francis Zurstrassen, who exhibited three varieties of grapes, the Isabella, Catawba and Burgundy, all very fine, and the bunches large, full and bright, and the fruit finely flavored.

10th Prize, for the second best variety of *Grapes*, a Silver Cream Ladle, \$2, awarded to Dr. Reuben Knox, who exhibited two varieties of grapes, the Catawba and Cape Grape, both good specimens of their kind, the fruit being fine and full.

11th Prize, for the greatest and best variety of *Quinces*, Silver Sugar Tongs, \$3, awarded to Thos. Allen, Esq., who exhibited three varieties, the Ap-

ple Shaped, the Pear Shaped, and the Portugal, all fine specimens, large and fair.

12th Prize, for the greatest and best variety of *Melons*, a pair of Silver Mustard Spoons, \$2, to Mr. Wm. Sigerson & Brothers, for a lot of fine Water Melons and Cantelopes, which looked exceedingly well, and proved most agreeable to the taste, upon an impartial trial.

The Society is indebted to several gentlemen, for specimens of fruit sent in for exhibition, not claiming premiums, who are entitled to our thanks.

The thanks of the Society are due to Mr. James Mitchell, of Belleville, Illinois, for the exhibition of a new Pear, of superior quality, raised by him from the seed, and named Mitchell's Russet. This Pear resembles the Seckel, in quality, shape and color, but it is of larger size.

The President brought to the notice of the Committee, several specimens of new fruit, which he had received from Judge Robert Wash, near the close of the exhibition. One of them, called the Christy Apple, is described as being particularly worthy of the notice of the Society. Among them was a small Pear, of good quality, raised by P. Chouteau, Sr., and the Cahokia Butter Pear, believed to be unexcelled by any of its kind.

The Committee noticed upon the tables some very handsome specimens of the "Ohio," or "Seegar Box" Grape, as it is now called in eastern publications. It was intimated to the Committee, that St. Louis may possibly claim the paternity of this grape; that the vine whence many cuttings have been distributed, is of long standing in this city, and early in possession of the Catholic missionaries.

The Committee may be allowed to express their gratification with the variety and excellence of the fruits exhibited, and with the new facts and fruits which have been brought to notice. Nor did they fail to observe, with pleasing astonishment, the enormous size of several new fruits, and that also to which many old varieties attain under the genial influences of our soil and climate. There can be no question of the adaptation and capacity of our soil and climate to the production of fruit of first rate qualities, and a plentiful supply of it, not only for home consumption, but for an extensive foreign market.

All of which is respectfully submitted.

The Committee on Flowers, &c., consisting of Dr. Gempp, Salisbury and McDonald, made the following award of premiums:

The Committee award to Mr. Florant M. Meline, for the greatest and best variety of Green House Plants, the premium offered by the Society, viz: a pair of silver butter knives.

The Committee award to Mr. Gert Goebel, for the second best variety of Green House Plants, the premium offered by the Society, viz: a silver sugar tongs.

The Committee award to Nicholas Riehl, for the best Parlor Bouquet, the premium offered by the Society, viz: a silver cream spoon.

The Committee award to Capt. Lewis Bissell, for the best Hand Bouquet, the premium offered by the Society, viz: a pair of silver salt spoons.

This Committee have been preparing a more full

report on the character, variety and beauty of the Flowers and Plants exhibited, but have not furnished it to us in time for this publication.

The Committee on Vegetables, consisting of C. Semple, Dr. R. F. Barrett, and B. Martin, through their chairman, Mr. Semple, made the following report: [Which we are obliged to omit.]

After the distribution of premiums, the President, Mr. Allen, addressed the meeting in a brief but impressive manner; explaining its objects and purposes, and forcibly illustrating the beneficial effects anticipated from its success. His remarks were listened to with profound attention, and received with applause.

After the articles exhibited had been disposed of, for the benefit of the Society, in which the crowd seemed each to vie the one with the other in manifesting his appreciation of the useful and beautiful, the Society adjourned. A. B. CHAMBERS, Sec'y.

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BUFFALO HORTICULTURAL SOCIETY.—The committee on Flowers and Flowering Plants, beg leave to offer the following report:—

The September Exhibition just closed, being the last of our Fairs, in *extenso*, for the season, it may not be amiss to take a retrospective glance of the floral season of labors, or rather pleasures, we are closing. And first, we would remark some peculiarities of the season, which may be admitted, has been rather an unusually short one. April and May, and indeed much of June, was cold and ungenial, although the Tulip show on the 27th of May (our first Exhibition) was regarded as a rich and beautiful display. The sun's rays had not warmed into active life the Floral Kingdom generally—the beauteous Queen, when seen, had the tinge of palor upon her cheek, nor was the strong and healthy green and majesty of mien visible until the latter part of June, from whence our season has been fine. A clear unclouded sky, with an occasional refreshing rain, tarried with us through July and August, bringing rapidly into bloom a rich profusion of flowers. The *Aphides*, generally so destructive to Roses at this period, have been less troublesome than is usual, and our Roses generally have had fine blooms. This delightful class of plants have astonishingly multiplied with us. Ere this society became existant, three years since, the common garden or June Roses, with very rare exceptions, were the only Roses known here. The present season, however, has demonstrated that we are not behind our suburban friends in this beautiful class of plants: all, or nearly all the leading *Perpetual*, *Tea*, *Bengal*, *Noisette* and *Bourbon* Roses that have attained celebrity either in this country or Europe, have bloomed with us. The *Pelargoniums*, too, which at the same period were confined to some dozen of the old varieties, have been displaced by a magnificent collection of over fifty entire new ones, embracing every colour and shade, forming as rich and gorgeous a display of intrinsic beauty during their blooming season (from May until August,) as can be well imagined. The modest but ever charming, and ever blooming *Verbena*, has been generally cultivated amongst us, and has this season been multiplied to over fifty varieties, together with some new seedlings of ac-

knowledgeed merit. The *Fuchsia* may also be regarded as a new plant with us. Three years since, the "Ladies Ear Drop," *Fuchsia Onagraria*, bearing a pretty little pendant flower, of two or three varieties, were greatly admired, but these have now disappeared giving place to the more recent splendid hybrids, of which there are some fifty varieties among us. The flowers being increased four-fold in size, and of the most beautiful varieties and shades of colour—*Paragon*, *Exoniensis*, *Majestica*, *Coccinea-rosea*, &c., &c., are truly magnificent. One of the most gorgeous of our Autumn flowers, "The *Dahlia*," has this season been more particularly introduced to our Society, and the magnificent collection of Mr. B. Hodge has drawn forth an universal admiration. There have been about sixty varieties bloomed; and would that most time honored sire, Mr. John Frost with his liny locks, but delay his visits to us for a few weeks longer, we may yet anticipate a rare treat. The *Dahlia* might well be denominated the King of Garden flowers, and the Rose his lovely Queen, but what a progeny of little royalties are there in the rapidly accumulating splendors of the parterre. The *Chrysanthemums* are not yet in bloom, being October to December flowers; and from the truly rich varieties we have amongst us, all originating from the splendid collection of Mr. B. Coe, and the large stock of *Camellias* that have this season found their way hither, we have yet the material for another Exhibition, should our Executive Committee deem it wise.

In taking a summary of the five monthly Exhibitions of the season, we find enumerated as shown, some forty varieties of Tulips, fifty varieties of carnations, one hundred and fifty varieties of Roses, thirty varieties of Pansies, over thirty varieties of *Fuchsias*, and over sixty varieties of *Dahlias*, with some several hundred green-house or pot plants, embracing all the choice specimens of *Cactus*, *Achimenes*, *Calceolarias*, *Azaleas*, *Pelargoniums*, *Nereum Splendens*, *Penstemons*, *Rhododendrons*, *Roses*, *Yuccas*, *Magnolias*, &c. And of *Annuals* a most gorgeous display, embracing a great many that have never before bloomed in this part of the country. These results of the progress of our infant Society are truly gratifying to your committee, as evidencing a rapid, discriminating taste and skill in Floriculture, alike creditable to ourselves and to the city generally, and may be taken as an earnest of our future efforts for the propagation of this truly delightful and social refining, *rationale* of intelligent society. To our Monthly Committee of Arrangements, both senior and junior, embracing during the season some one hundred and twenty ladies, are we especially indebted for their assiduous and ever tasteful labors, in the decorations of the Hall, in the arrangement of the bouquets, and their ready and smiling acquiescence of the duties devolving upon them; and indeed it were but frank to acknowledge that to the Ladies of this Society belong largely the honors it has received, and the success that has accompanied it from its very existence.

At the close of the Fair, the President, Mr. L. F. ALLEN, delivered a highly instructive and valedictory address, giving a retrospective sketch of the progress and well being of the Society since its

organization; he having been its only President, and declining a farther re-election. The address was attentively listened to, and at the close was warmly and affectionately responded to. The Vice-President being in the chair, the following resolutions were adopted:

Resolved, That the thanks of this Society be tendered to our President, Mr. L. F. ALLEN, for the highly instructive and spirited Address we have just heard, and that we still farther tender our most cordial thanks for the untiring and unabated zeal he has manifested for our welfare, and the sagacity displayed in leading us through the first three years of our existence, to what we trust, will be a firm guarantee of future usefulness. And, that a copy of the address be granted the Society for publication.

After some pertinent remarks relative to, and seconding the resolutions adopted by the Erie Co. Agricultural Society, urging the claims of this city to be the place for holding the State Agricultural Fair for 1848, it was *Resolved*,

That this Society appoint a Committee of eleven to confer with the citizens and other Committees, in relation to having the State Fair for 1848, held at the city of Buffalo.

The following gentlemen were elected said Committee:

Lewis Eaton, Col. B. Hodge, Cha's Taintor, R. H. Haywood, Asa Hart, J. R. Lee, W. R. Coppock, J. H. Coleman, N. H. Gardner, T. R. Coulton, L. Hodges.

Col. B. Hodge nominated the following names for honorary membership of this Society:—

A. J. Downing, Esq., Newburgh, N. Y.; Nicholas Longworth, Esq., Cincinnati, Ohio; David Thomas, Esq., Aurora; Luther Tucker, Esq., Albany; Col. H. H. Coit, Euclid, Ohio; who were unanimously elected.

The contributions were as follows:

Mrs. L. H. Pratt—Cut flowers, Dahlias, beautiful Cockscomb, Sweet Pea, Globe Amaranthus, &c.

Mrs. W. R. Coppock—two bouquets of green house flowers, &c., also, two baskets of cut flowers for decorations, &c., composed of Dahlias, seven varieties, (2d rate only) with double and quilled asters, &c., &c.

Miss Harriet J. Arms—A very pretty wreath of verbenas.

Mrs. R. McPherson—Cut flowers Phlox Drummondii, Zinneas, &c.

Mrs. L. Eaton—Bouquet composed of Petunias very fine, Balsams, sweet Pea, Phlox, very good, Dahlias, nine varieties; several of these were fine flowers.

Miss Caroline Putnam—A tasteful bouquet of Dahlias, French Marigold, and several varieties of prairie flowers, very pretty.

Miss Hannah Hart—A beautiful wreath of Dahlias, also a bouquet of Dahlias, fourteen varieties, the most of those were very fine.

Mrs. E. H. Easterbrooks—Bouquet of fine Dahlias, &c.

Mrs. Chas. Howland—Two bouquets composed of Dahlias, eight varieties, very fine, Passion flower,

Cerulia, Zinneas, Pelargoniums, Hemerocallis, &c., very tastefully made up.

Mrs. Chas. Taintor—Two baskets of miscellaneous cut flowers.

Mrs. H. W. Rogers—Two bouquets of Dahlias, eight varieties, tastefully made up.

Mrs. H. Pratt—Two bouquets, composed of choice Dahlias, Roses, Geraniums, two varieties, Althea frutex, &c.

Gen. H. B. Potter—A pan of rich and fine Dahlias, nine varieties.

Mr. W. Webb—Eight bouquets, tastefully made, composed of Roses in variety, Verbenas, Fuchsias, Penstemon, Passiflora elata, very beautiful, Carnations, Salvia patens and fulgens, Heliotrope, Calceolarias, Mignonette, Globe Amaranthus, also two baskets of Dahlias, and a large collection of very rich annuals. Mr. Webb's annuals are particularly beautiful.

Mr. R. H. Haywood exhibited the flower of the Hercules Club; this tree from some cause has not of late generally flowered with us.

Miss Mary Davis—Buffalo Nursery—Four hand bouquets, composed of rich and choice Dahlias in variety, Roses, verbenas, several varieties of Phlox, the Stapelia flower, Begonias, Heliotropes, Zinneas, Fuchsias, &c. The bouquets were very tastefully made up.

Mr. B. Hodge—Buffalo Nursery—A case of splendid Dahlias, containing forty varieties, also a very tasteful pyramid of Dahlias, embracing in the whole some 60 varieties.

These Dahlias we have before mentioned as being worthy of admiration, and did the constitution and by-laws of our society grant premiums, we should certainly award Col. Hodge the first one; we would, however, desire the Executive Committee to award to Col. Hodge, as a token of this society's approbation for his enterprise in procuring and cultivating this stock of Dahlias, a Diploma.

Mrs. E. Tyler—A large floral ornament on a square frame, groundwork beautiful moss, in the centre a large heart well formed, and worked with German Asters, Verbenas, White Phlox, Candy Tuft, Arbution Striata, &c., the whole surmounted by a rich border of fine Dahlias. The design was deserving of high approbation.

Mr. E. Tyler—Fifteen choice and very tasteful bouquets, composed of Roses of fine variety, and also Arbutions, Fuchsias, Phlox Drummondii, Dahlias, &c., &c.

Mr. Tyler also exhibited a large case of Dahlias, many of which were very fine.

Green-House Plants.—Miss Hannah Hart—Species of Cactus, name not known.

Mr. E. Tyler—North-street—Six pots of fine Fuchsias, varieties Exoniensis, Paragon, Duke of Wellington, a fine specimen of Russelia Juncea, in flower, Ficus Elasticus, Roses, Mad. Despres, Agrippina, White Cyclamen, a very fine, and remarkably thrifty orange tree, in full bearing.

The show of green-house plants was by far the fewest of the season, the day being very windy, and with all very cold, prevented those having blooms to risk them.

W. R. COPPOCK, *Chairman*.



Horticulturist

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

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No. 6.

HOW TO CHOOSE THE SITE FOR A COUNTRY HOUSE, is a subject now occupying the thoughts of many of our countrymen, and therefore is not undeserving a few words from us at the present moment.

The greater part of those who build country seats in the United States, are citizens who retire from the active pursuits of town to enjoy, in the most rational way possible, the fortunes accumulated there—that is to say, in the creation of beautiful and agreeable rural homes.

Whatever may be the natural taste of this class, their avocations have not permitted them to become familiar with the difficulties to be encountered in making a *new* place, or the most successful way of accomplishing all that they propose to themselves. Hence, we not unfrequently see a very complete house surrounded, for years, by very unfinished and meagre grounds. Weary with the labor and expense of levelling earth, opening roads and walks, and clothing a naked place with new plantations, all of which he finds far less easily accomplished than building brick walls in the city, the once sanguine improver often abates his energy, and loses his interest in the embellishment of his grounds, before his plans are half perfected.

All this arises from a general disposition to underrate the difficulty and cost of making plantations, and laying the groundwork of a complete country residence. Landscape gardening, where all its elements require to be newly arranged, where the scenery of a place requires to be almost wholly created, is by no means either a cheap or a rapid process. Labor and patience must be added to taste, time and money, before a bare site can be turned into smooth lawns and complete pleasure grounds.

The best advice which the most experienced landscape gardener can give an American about to select ground for a country residence, is, therefore, to choose a site where there is *natural wood*, and where nature offers the greatest number of good features ready for a basis upon which to commence improvements.

We have, already, so often descanted on the superiority of trees and lawns to all other features of ornamental places united, that our readers are not, we trust, slow to side with us in a thorough appreciation of their charms.

Hence, when a site for a country place is to be selected, (after health and good neighborhood,) the first points are, if possible, to secure a position where there is some exist-

ing wood, and where the ground is so disposed as to offer a natural surface for a fine lawn. These two points secured, half the battle is fought, for the framework or background of foliage being ready grown, immediate shelter, shade, and effect is given as soon as the house is erected; and a surface well shaped for a lawn, (or one which requires but trifling alterations,) once obtained, all the labor and cost of grading is avoided, and a single season's thorough preparation gives you velvet to walk about upon.

Some of our readers, no doubt, will say this is excellent advice, but unfortunately not easily followed. So many are forced to build on a bare site, and "begin at the beginning."

This is no doubt occasionally true, but in nine cases out of ten, in this country, our own observation has convinced us that the choice of a poor location is the result of local prejudice, or want of knowledge of the subject, rather than of necessity.

How frequently do we see men paying large prices for indifferent sites, when at a distance of half a mile there are one or more positions on which nature has lavished treasures of wood and water, and spread out undulating surfaces, which seem absolutely to court the finishing touches of the rural artist. Place a dwelling in such a site, and it appropriates all nature's handiwork to itself in a moment. The masses of trees are easily broken into groups that have immediately the effect of old plantations, and all the minor details of shrubbery, walks, and flower and fruit gardens, fall gracefully and becomingly into their proper positions. Sheltered and screened, and brought into harmony with the landscape, these finishing touches serve in turn to enhance the beauty and value of the original trees themselves.

We by no means wish to deter those who

have an abundance of means, taste, enthusiasm and patience, from undertaking the creation of entire new scenery in their country residences. There are few sources of satisfaction more genuine and lasting than that of walking through extensive groves and plantations, all reared by one's own hands—to look on a landscape which one has transformed into leafy hills and wood embowered slopes. We scarcely remember more real delight evinced by any youthful devotee of our favorite art, in all the fervor of his first enthusiasm, than has been expressed to us by one of our venerable Ex-PRESIDENTS, now in a ripe old age, when showing us, at various times, fine old forest trees, oaks, hickories, etc., which have been watched by him in their entire cycle of development, from the naked seeds deposited in the soil by his own hands, to their now furrowed trunks and umbrageous heads!

But it must be confessed, that it is throwing away a large part of one's life—and that too, more especially, when the cup of country pleasures is not brought to the lips till one's meridian is well nigh past—to take the whole business of making a landscape from the invisible carbon and oxygen waiting in soil and atmosphere, to be turned by the slow alchemy of ten or twenty summers' growth into groves of weeping elms, and groups of overshadowing-oaks!

Those, therefore, who wish to start with the advantage of a good patrimony from nature, will prefer to examine what mother Earth has to offer them in her choicest nooks, before they determine on taking hold of some meagre scene, where the woodman's axe and the ploughman's furrow have long ago obliterated all the original beauty of the landscape. If a place cannot be found well wooded, perhaps a fringe of wood or a background of forest foliage can be taken

advantage of. These will give shelter, and serve as a groundwork to help on the effects of the ornamental planter. We have seen a cottage or villa site dignified, and rendered attractive forever, by the possession of even three or four fine trees of the original growth, judiciously preserved, and taken as the nucleus of a whole series of belts and minor plantations.

There is another most striking advantage in the possession of considerable wooded surface, properly located, in a country residence. This is the seclusion and privacy of the walks or drives, which such bits of woodland afford. Walks, in open lawn, or even amid belts of shrubbery, are never felt to have that seclusion and comparative solitude which belong to the wilder aspect of woodland scenes. And no contrast is more agreeable than that from the open sunny brightness of the lawn and pleasure grounds, to the retirement and quiet of a woodland walk.

Again, it is no small matter of consideration to many persons settling in the country, the production of picturesque effect, the working out a realm of beauty of their own, without any serious inroads into their incomes. One's private walks and parterres, unluckily, cannot be had at the cost of one's daily bread and butter—though the Beautiful overtops the useful, as stars outshine farthing candles. But the difference of cost between keeping up a long series of walks, in a place mainly composed of flower garden, shrubbery and pleasure grounds, compared with another, where there are merely lawns and sylvan scenery, is like that between maintaining a chancery suit, or keeping on pleasant terms with your best friend or favorite country neighbor. Open walks must be scrupulously neat, and broad sunshine and rich soil make weeds grow, faster than a new city in the best "western diggings,"

and your gardener has no sooner put the series of walks in perfect order, than he looks over his shoulder, and beholds the enemy is there, to be conquered over again. On the other hand, woodland walks are swept and repaired in the spring, and like some of those gifted individuals, "born neat," they require no more attention than the rainbow, to remain fresh and bright till the autumn leaves begin to drop again.

Our citizen reader, therefore, who wishes to enjoy his country seat as an elegant sylvan retreat, with the greatest amount of beauty and enjoyment, and the smallest care and expenditure, will choose a place naturally well wooded, or where open glades, and bits of lawn, alternate with masses or groups, and, it may be, with extensive tracts of well grown wood. A house once erected on such a site, the whole can very easily be turned into a charming labyrinth of beautiful and secluded drives and walks. And as our improver cultivates his eye and his taste, nature will certainly give him fresh hints; she will tell him how by opening a glade here, and piercing a thicket there, by making underwood occasionally give place to soft turf, so as to show fine trunks to the greatest advantage, and thereby bringing into more complete contrast some wilder and more picturesque dell, all the natural charms of a place may be heightened into a beauty far more impressive and significant than they originally possessed.

Why man's perception of the Beautiful seems clouded over in most uncultivated natures, and is only brought out by a certain process of refining and mental culture, as the lapidary brings out, by polishing, all the rich play of colours in a stone that one passes by as a common pebble, we leave to the metaphysicians to explain. Certain it is, that we see, occasionally, lamentable proofs of the fact in the treatment of na-

ture's best features, by her untutored children. More than one instance do we call to mind, of settlers, in districts of country where there are masses and great woods of trees, that the druids would have worshipped for their grandeur, sweeping them all down mercilessly with their axes, and then planting with the supremest satisfaction, a straight line of paltry saplings before their doors! It is like exchanging a neighborhood of proud and benevolent yeomanry, honest and free as the soil they spring from, for a file of sentinels or *gens d'armes*, that watch over one's out-goings and incomings, like a chief of police!

Most happily for our country, and its beautiful rural scenery, this spirit of destruction, under the rapid development of taste that is taking place among us, is very fast disappearing. "Woodman, spare that tree," is the choral sentiment that should be instilled and taught at the agricultural schools, and re-echoed by all the agricultural and horticultural societies in the land. If we have neither old castles nor old associations, we have at least, here and there, old trees that can teach us lessons of anti-

quity, not less instructive and poetical than the ruins of a past age.

Our first hint, therefore, to persons about choosing a site for a country place, is, in all possible cases, to look for a situation where there is some natural wood. With this for the warp—strong, rich, and permanent—you may embroider upon it all the gold threads of fruit and floral embellishment with an effect equally rapid and successful. Every thing done upon such a groundwork will tell at once; and since there is no end to the delightful task of perfecting a country place, so long as there are thirty thousand species of plants known, and at least thirty millions of varied combinations of landscape scenery possible, we think there is little fear that the possessor of a country place will not find enough to employ his time, mind, and purse, if he really loves the subject, even though he find himself in possession of the fee-simple of a pretty number of acres of fine wood.

But we have already exhausted our present limits, and must leave the discussion of other points to be observed in choosing a country place, until a future number.

REMARKS ON GARDENING AS A SCIENCE.—No. 6.

BY DR. WM. W. VALK, FLUSHING, L. I.

WE concluded our No. 5, by observing that "water was the instrument by which all manuring substances are brought into a condition to furnish the liquid aliment that is absorbed by the roots of a plant, and which we term sap."

It is quite certain, that in *dry ground*, whatever be its condition as respects manure or vegetable earth, no plant can continue to thrive. For this reason, persons might be apt to suppose, that water *dissolves* the manure, and conveys it in the

state of a liquid to the roots; and such, or something very like it, was the received opinion of early cultivators. But good soil, that which is fit for the purposes of nutrition, will not dissolve; it will not yield colouring matter to water. Therefore, we conclude that the plant, under the stimulus of solar light, (which also operates on the ground, and is *absorbed*—not extinguished,) *decomposes* the water that exists in the soil, and thus induces an electric current, which in its turn decomposes the manure, and

converts it into primary raw sap. What this sap may be, it is probable we shall never be able to determine with precision; but the suggestion may be ventured, that the elements of water are thus developed, which combine instantly, in the form of the purest water, depositing the carbon in the soil. We do not mean to say that *all* the carbon of the manure, or vegetable earth, is deposited; a portion may be, and very probably is, dissolved at the moment of the extrication of both, by an equivalent portion of hydrogen; but what we assert is this—that water does not act as a direct solvent of manure, no such thing as dissolved liquid manure being taken up, nutritively, by the roots; and that sap, be it simply aqueous, or a compound of water and some hydro-carbon, is the secondary result of an electrolytic process, nearly allied to galvanism.

If the views expressed be correct, there will be no difficulty in accounting for the darker hue assumed by ground under crop, for the carbon being deposited, remains in it.

In the Journal of the Royal Agricultural Society, page 250, Dr. DAUBENY, in a lecture on manures, believes with LIEBIG, that humus, “during the whole period of its decay, until it has reached that ultimate point at which it ceases to be soluble, and has become a kind of *caput mortuum*, goes on continually disengaging carbonic acid; so that the roots of plants fixed in humus of this quality, are surrounded by an atmosphere of the gas in question, which is therefore held in solution by the water taken up by them as sap.” But the proof is here wanting that carbonic acid is so dissolved. Is it not far more likely that, if this aerial acid be produced, it passes at once into the atmosphere, and thence is taken into the vegetable organization by

the leaves, to be converted into specific fluids and woody fibre?

Water certainly does act as a solvent, but not of vegetable mould; as *rain*, it conveys into the earth, with every shower, a certain quantity of *ammonia*, which is a saline substance of *extreme utility in vegetation*. On this subject, LIEBIG thus expresses himself: “Any one may satisfy himself of the presence of ammonia in rain, by simply adding a little sulphuric acid to a quantity of rain-water, and evaporating this nearly to dryness in a clean porcelain basin. The ammonia remains in the residue in combination with the acid, and may be detected by a little powdered lime, which separates the ammonia, and thus renders its peculiar pungent smell sensible. The sensation which is perceived upon moistening the hand with rain-water, so different from that produced by distilled water, and to which the term *softness* is vulgarly applied, is also due to the carbonate of ammonia contained in the former.”

“The ammonia which is removed from the atmosphere by rain and other causes, is as constantly replaced by the putrefaction of animal and vegetable substances.” “It is worthy of observation, that the ammonia contained in rain and snow water, possesses an offensive smell of perspiration and animal excrements—a fact which leaves no doubt respecting its origin.” To how many gardeners and horticulturists is this fact familiar?

We shall have occasion to say more of ammonia, when we consider the products of vegetables; it will suffice now to remark, that nature has herein provided a corrector of what would, like atmospheric carbonic acid, become a deadly nuisance, and, by bringing down ammonia with the rain, converts it into a solvent of vegetable manure, fitted for laboration by the vital principle.

This ammonia, and also the potassa in loams, and other saline substances, are actually dissolved by water, and thus duly conveyed by the absorbents of the roots into the *organism*.

Rain-water collected in cisterns lined with *cement*, becomes rather hard, because some of its ammonia is abstracted, a defect easily remedied by the addition of a small quantity of this salt to such water. Common hard water from wells contains calcareous matter dissolved by an excess of carbonic acid. By exposure to the air, some of this acid escapes, carbonate of lime, (chalk) is deposited, and the water is improved; but for horticultural purposes, nothing can be compared to the water from rain, which flows through pastures into a pond which has a clay bottom. It is soft, replete with every soluble matter adapted to the nourishment of plants, and far preferable to any that can be obtained from artificial confined depositories. Possessing a natural fluid of so excellent a quality, the gardener will have no occasion to trouble himself with manure-water or any other offensive compounds, the results of which, to say the best of them, are ever doubtful, and certainly, in very many instances, positively pernicious or fatal.

AIR. Atmospheric air must at least be considered as important to vegetable life, though not so vitally essential to plants as to animals; for in fact its direct operation has not yet been clearly made out. To investigate the agency of the atmosphere with any degree of satisfaction, its *composition* must be properly understood. Chemically speaking, one hundred volumes of air consists of twenty-one volumes of oxygen gas, and seventy-nine volumes of nitrogen gas, not in chemical union, but simply mixed. It also contains varying proportions of aqueous

vapor and carbonic acid. Oxygen gas possesses an extensive range of affinity, and it is obvious, that were it alone to constitute our atmosphere, and left unchecked to exert its powerful effects, all nature would soon be one scene of universal destruction. It is on *this* account that nitrogen is present in so large proportion. Possessing no disposition to unite with oxygen, it is peculiarly adapted for this purpose, and exerts no action upon the processes proceeding on the earth.

The aqueous vapor and carbonic acid gas materially modify the properties of the air. The former falls upon the earth as rain, and brings with it any soluble matter which it meets with in its descent; the latter performs a *most important part* in the process of vegetable nutrition.

Carbonic acid, water, and *ammonia* are the final products of the decay of animal and vegetable matter. In an isolated condition, they usually exist in the form of gas. Hence, on their formation, they must escape into the atmosphere. But ammonia has not hitherto been enumerated among the constituents of the air, although, according to our view, (LIEBIG) it can never be absent. The reason of this is, that it exists in extremely minute quantity in the amount of air usually subjected to experiment; it has consequently escaped detection. But rain which falls through a large extent of air, carries down in solution all that remains in suspension in it. Now ammonia always exists in rain water, and from this fact we must conclude that it is invariably present in the atmosphere.

Such are the principal constituents of the air, from which plants derive their nourishment, and of which more will be said in our next.

WM. W. VALK, M. D.

Flushing, L. I., Nov. 1847.

HOW TO RAISE PEAR SEEDLINGS.

BY ROBERT NELSON, OF NEWBURYPORT, MASS.

THE United States of America will, no doubt, soon take the highest rank among the fruit growing countries. Soil and climate are, in no other part of the world, better adapted to all different kinds of fruit; the annually increasing number of horticultural societies, which in a praiseworthy manner distribute premiums, and excellent works in all branches of gardening, daily improve the knowledge and taste of the horticultural public.

Many persons, hitherto unacquainted with the culture of trees, are now going into the orchard and nursery business, attracted by the facility in raising apples and peaches. But there is a general want of and demand for pears.

Every nurseryman knows the difficulty in keeping the pear seedlings through the first winter, particularly in New-England, where the severe frost commonly throws the feeble seedlings out of the ground, and destroys them.

In order to prevent this evil, many nurserymen mix pear and apple seeds together, that the curled apple roots may twine themselves around the tap roots of the pears, and thus keep them in their places in the ground; other persons put the pear seedlings into a cellar, or protect them some other way, but not with the best success.

A large part of the labor of many gardeners and nurserymen is, I think, worse than thrown away, owing to their want of scientific knowledge in botany and gardening. Every thing in the vegetable kingdom is governed by fixed laws, and in order to be successful in the cultivation of plants, we must study their laws, instead of proceeding at random. The volume of nature

is spread open before us, and serves to invite us to continual observation and deduction for practical uses.

Many persons, I am sure, when in winter walking through a forest, will have noticed, that where dry leaves are occasionally placed in a thick layer, the frost has but very little influence on the ground, if any at all. To those nurserymen who have raised their pear seedlings in the common way, and are anxious for keeping them through the winter, I must strongly recommend to cover them with dry leaves, say about one foot thick, and to throw some brushwood over, to prevent the same from being blown away. There is not the least doubt, but that this protection will answer for pear seedlings, as I often have seen beds of *Gladiolus cardinalis*, *Fuchsia coccinea*, and other tender roots, by this means sufficiently protected against very severe frost. And even if the frost should reach the roots, the leaves will prevent the destructive influence of any sudden change of weather, and keep out the sun, which is of the greatest importance.

Weary with the difficulties that seem to stand in the way in raising pear seedlings, most American nurserymen import them from England or France.

After being transplanted, the pear seedlings will do very well, (if it is performed in spring,) and the next winter will not injure them. What is the reason? I need hardly mention as the reason, that they, after having lost their tap-root, are forced to push out lateral roots, and are not afterwards liable to the same injury by frost. And why wait until the second year to perform this operation?

As the great object is, to make them branch out their roots as soon as possible, several European nurserymen recommend "tapping." This operation is to be done when the seedlings have attained a height of four or six inches, by two men with sharp spades, put in at the same time on both sides of the row, in a sloping direction, in order to cut off the tap root; but as it could not well be done before the summer is rather advanced, and even then seldom can be done properly, the season is too short for the seedlings to push out branching roots, strong enough to stand the following winter.

Having been a professional gardener and nurseryman in the north of Europe for nearly thirty years, I hope that my experience may be acceptable to many persons engaged in this business.

For several years, I succeeded in raising pears in a very simple way. I sowed the seed in the fall, as soon as gathered, in a garden bed, distributing them pretty thickly. The plants will easily come up in the spring, and as soon as they get four leaves, I take them up, cut off the tap root, and transplant them into beds or nursery rows of good soil, where the young plants soon will make lateral roots, and start nicely. I am not very particular as to exact length in cutting off the tap root, as I commonly take a dozen of plants or more in my hand, and cut off the roots at once at half length.

By thus increasing the number of mouths or feeders of the plants, they will grow excellently well. The branching roots now, having the whole summer before them, will be sufficiently strong to stand the winter, *even without protection*, and in the next summer, the *second*, they will be fit for budding.

Although this summer was unfavorable to the growth of pear seedlings, still all the neighboring nurserymen, who have

seen my seedlings, have declared, that they "*never saw such branching roots on seedlings from last spring, even on the very best raised apple seedlings, and that their being thrown out by the frost would be almost impossible.*"

I have no doubt, that some old fashioned nurserymen will object, that this treatment is too violent for such feeble plants; but the result for several years has proved its practical value. "It is too much trouble," I hear some enemy of new inventions reply. It is some labor undoubtedly, but not half as much as to lift them out in the fall, keep them in the cellar through the winter, and plant them out again next spring. That is certainly too much trouble, and that will check the plants much more than their being tapped and transplanted when very young. In my method they are left undisturbed after their first transplanting, which is much easier performed than most persons may think, and of course they will continue their growth much better.

ROBERT NELSON.

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[Mr. NELSON's articles are always acceptable, since they are the result of sound theory and practice combined; and we commend the foregoing to those who have heretofore failed in rearing young pear stocks—the most precarious and difficult of all seedling fruit trees.

To grow them with success in the common mode, a *very deep soil*, inclining to dampness rather than dryness, is indispensable. We have no doubt that the mode of *forcing them to produce fibrous roots in abundance the first season*, which our correspondent recommends, which is new to us, by giving them greater firmness in the wood, and making them more dependent on the good surface soil than the tap-rooted seedlings are, will enable many cultivators to do successfully, what they have hitherto failed to do at all.—ED.]

THE ACCLIMATATION OF PLANTS.

BY THE EDITOR OF THE LONDON HORTICULTURAL MAGAZINE.

JOHNSON, in his "Principles of Gardening," treats this subject as seriously as if there were anything in it but a chimera; as if the constitution of a plant could be permanently altered; and after all, it is these great theorists who mislead themselves first, and their followers afterwards. In this case, there is no new fact adduced. The old humdrum tale about *Aucuba japonica* and *Pæonia moutan* having been stove plants, removed first to the green-house, and then out of doors, is of course resorted to as a presumed confirmation of the doctrine of the acclimation of plants, as if it were fact instead of fiction.

So far as these illusions of great men induce experiment, they are not without their good effects. Mr. Johnson's error lies in presuming that the mere fact of a plant from a hot country being grown in the open air, is indicative or proof of a change of the plant or of its constitution, whereas it is nothing more than the proof of its qualities of endurance. He says, "Every plant has a peculiar temperature, without which its functions cease, but the majority of them luxuriate most in a climate of which the extreme temperatures do not much exceed 32 degrees and 90 degrees. No seed will vegetate, no sap will circulate at a temperature at or below the freezing point of water, yet the juices of the plant are not congealed at a temperature far more depressed; and I know of no other more satisfactory proof, that, like a cold blooded animal—the frog and the leech for example, it becomes torpid, though life is not extinct, unless excited by a genial temperature." Something very much bordering on our notions, which are founded on practice, may be found in Mr. Johnson's reasoning, but his conclusions are altogether opposed to us. He says, "no cultivation will render plants, natives of the torrid zone, capable of bearing the rigor of our winters, although their offspring reared from seed may be rendered much more hardy than their parents."

We quite agree with this, because we have shown and proved over and over again

that cultivation will not change the powers of endurance either for heat or cold; but the steps which Mr. Johnson and other writers on acclimation recommend, are perfectly right and proper to be taken, not as they allege, to acclimatise the plant, but to prove what it will endure.

If the British oak were cultivated in a stove, [hot-house of high temperature] it would no more be a stove plant for that operation, than a dog would be a horse for being kept in a stable; but an oak brought up in a stove, must not be planted out from the stove to the open ground in mid-winter, because the sudden check might kill it, and in all probability would kill it, though it is able to endure intense frost when properly managed. Therefore, all plants to be grown in the open air, ought to be raised in the open air, or if necessarily grown first in a stove, should be gradually, instead of suddenly brought to lower temperature.

Whoever can afford to lose plants, should try the experiment of their open air culture, because we may be growing in stoves and green-houses many subjects that would stand in the open ground in our winters. As Mr. Johnson very properly observes, "When a new plant arrives from tropical latitudes, it is desirable to use every precaution to avoid its loss; but so soon as it has been propagated from, and the danger of such loss is removed, from that moment ought experiments to commence;" but instead of saying, "*to ascertain whether its acclimatization is attainable,*" which he does, he ought to say, to try what are its powers of enduring cold, because that and that only can have to be tried; it is worse than nonsense to talk of any change in the powers of the plant being attained. It is quite right to gradually bring the plant to its proper trial, and not to do any thing suddenly, because, as we have shown, the oak itself might be reared in a stove and grow there, and would be killed, if changed from thence to out of door growth in mid-winter. The nature of the plant is not changed; but it is the same with plants as

with animals—remove them from 90 degrees to 30 degrees in the same hour, and mischief must ensue.

The hardening off, as it is called, of all plants raised in heat, for planting in the open air, is quite requisite on all occasions, from the common annuals to dahlias. All are in practice submitted to the same process: first, by admitting more air than usual; then by removal to a cooler situation; lastly, perhaps to a cold frame which will merely keep out frost; although these things are to be planted out in our warm spring months, as the temperature is increasing instead of declining.

The reasoning of Mr. Johnson is good, and his advice is good, for on account of the much greater facility for cultivating hardy plants, the more we have capable of enduring our winters the better. "Hence," says the author of the "Principles of Gardening," "hence it is very desirable that an extended series of experiments should be instituted, to ascertain decisively whether many of our present green-house and stove plants could not endure exposure to our winters, if but slightly or not at all protected. It may be laid down as a rule, that all Japan plants will do so on the southern coast counties of England, but it remains unascertained to what degree of northern latitude in our island *this genial power of endurance extends*." This last remark is in character with a practical man, for in truth that is the only inquiry to conduct: no possibility of changing the power of endurance exists; all we have to do, is to see what power the plant has, and there ends our task; we can then assign the plant to its proper station. Mr. Johnson says, "We all know the larch was once kept in a green-house, and within these few months, such South American plants, as *Tropeolum pentaphyllum* and *Gesnera douglasii*, have been found to survive our winters in our garden borders. Very true,; but the larch was no more a green-house plant for that fact, nor does the mere fact of surviving our winters in our garden borders in Scotland and Suffolk, or in Herefordshire, prove a jot towards the two plants being hardy. We remember very well seeing *Tacsonia pinnatistipula* flowering on Twickenham Common, in

front of a cottage, by the side of *Tropeolum aduncum*, in the middle of January, yet the former is a tender plant, whatever the latter may be; but the winter accommodated itself to the plant, not the plant to the winter.

A registering thermometer alone can settle the question, as to how much frost the plant endures, or whether it endures any, and the thermometer ought not merely to be out of doors in the open air, but it should hang where the plant is; for we have seen the dahlia in full flower in one place, and cut down to the ground in another, not one hundred yards off. And then again it has to be considered whether a sudden change has not done more towards killing a plant, than the intensity of the frost; for it must be admitted that rapid changes from heat to cold, and vice versa, do more mischief in our winters than the actual cold would, if it came gradually and went gradually. We think nothing of the mere fact of plants once considered tender, being found hardy.

Mr. Johnson says: "Another fact is, that many tropical plants, of every order and species, have been found to require much less heat, both during the day and during the night, than gardeners of a previous century believed. Other plants than those already noticed have passed from the tropics to our parterres, and even to those of higher northern latitudes. The horse-chestnut is a native of the tropics, but it endures uninjured the stern elements of Sweden. *Aucuba japonica*, *Peonia moutan*, we all remember to have passed from the stove to the green-house, and now they are in our open gardens."

All this is very true, but it does not show that the nature of the plants, or their powers of endurance have changed one degree, or even a shade of one. It is said further on: "Then, again, there is no doubt that all the Coniferae of Mexico, which flourish there at an elevation of more than 8,000 feet above the sea coast, will survive our winters in the open air. Among them are, *Pinus llaveana*, *Pinus teocote*, *Pinus patula*, *Pinus hartwegii*, *Cupressus thurifera*, *Juniperus flaccida*, *Abies religiosa*, and some others."

Perhaps the learned author will some of

these days condescend to enlighten us rather more upon this subject, and inform us how there could be any doubt. The *Pinus lla-veana*, *teocote*, *patula*, and *hartwegii*, are known hardy plants, and were introduced from Mexico as such, and we should like to know how they could be other than hardy from a climate like that experienced at the top of a mountain 8,000 feet high.

The Coniferæ of Mexico require no acclimatising, as it is called. There can be no doubt that they have to endure greater hardships on the mountains of Mexico, than they do in our ordinary winters; but this has nothing to do with the question of acclimatation. We have all through maintained that it is impossible to alter in any plant its powers of endurance. The only way properly to ascertain a plant's powers of endurance, is to gradually change its temperature, until it is placed in the open ground; and to select several positions, even those of different circumstances, as north, south, east and west aspects, with a registering thermometer at each place.

*The conditions most favorable to a plant are those which involve the least change, and that change the most gradual. It will often be found, that when there is no protection, a plant under a south wall, or a south-west, well perish, while one in a northern or north-eastern exposure will survive; the one never being so greatly excited as the other, is consequently never subject to such great changes, and hence its endurance. The plant placed in the coldest aspect, having no sun to act upon its frozen juices, gradually thaws; while that which is subject to the immediate operation of a hot sun, which frequently succeeds a frost, is often very suddenly acted upon.** But there are circumstances under which plants may succeed better than they generally do, and among them there are certain conditions that can be supplied: for instance, gravelly bottom, good drainage, poor compost, shelter from the northeast winds, are all favorable to a plant that is susceptible of injury from cold; not that these circumstances alter the plant, but they change the nature of what it has to bear. The gravelly bottom is always warmer, the

good drainage always tends to the same end, the poor soil keeps the plant from growing too rapidly, and the shelter is of the greatest consequence; but if, notwithstanding all these circumstances the winter is severe enough to overcome them, the half hardy plant that would go through some winters will perish. It will bear no more hardship, after all that can be done for it, than it would have borne without so much coaxing, because all that has been done only changed the hardships it had to go through, and not the constitution of the plant itself.

But let us now consider how far, according to Mr. Johnson's notions, the offspring of tropical plants raised from seed may be rendered much more hardy than their parents. Now we deny that a seedling can be rendered more hardy than the parents; although we do admit that seedlings *may* be more hardy than their parents. Our opinions are founded on this one fact—Among plants known to be tender, the dahlia, potato, and some other subjects, something has been done in the way of seedlings, and in a batch of many, some will be found affected with the frost more than others. Among broccoli, cauliflowers, and some other subjects, it is known that the seedlings will in some cases differ from the parent—some will endure the winter better, some come earlier, some stand better; in short, it is not at all uncommon to see a visible change in many of the plants. The new varieties of peas, cabbages, cauliflowers, broccoli, turnips, melons, cucumbers, and all kinds of fruit, have been obtained from seed, and the constant variations to be found in seedlings from a known parent, show us distinctly that it is fair to hope, that in a limited degree there may be a progeny somewhat more hardy than the parent.

We were once going through an immense piece of broccoli, after the extreme hard winter so oftencalled Murphy's, when on or about the 11th of January, there was the hardest frost known in England. It was as difficult to find a bit of vegetable alive as if every thing had been burned up. On this occasion, there were, among a wreck of thousands of plants, which were rotten and

* We have italicised this passage as containing the pith of all practical knowledge in the treatment of half hardy plants.—ED. HOBT.

perished and putrid, two or three plants as strong and healthy as if there had been no frost; we remarked at the time they were valuable exceptions to the desolation around, and that their seed would pay more than the whole crop would have done. All that we could get out of the gardener was, that the family must have those three heads, and he could not save them; and so it was, the family, or some part of it, had noticed them, and ordered them to be cut for dinner. The gardener would have lost an excellent sort, or rather three excellent sorts, for one was completely sprouting, one a rather dark, and the other a white head. Here was evidently harder offspring than the rest of the seedlings appeared to be, and we can hardly doubt that in every description of plant, it is possible to obtain plants harder than the parent, though not very commonly so without hybridizing, as it is called, that is, impregnating or fertilizing a hardy kind of plant with one of the tender, and so producing hardy plants with the principal characters of the tender one. At all events, there is no denying, that if seed be saved as carefully as possible, and seedlings raised from it, there will be found differences in the seedlings in foliage, in habit, in hardiness and in other properties that render the plants more valuable; while, on the other hand, there will be discovered many much worse than the original.

So long therefore as variation is to be found in seedlings, as compared with the parent plant, so long there must be allowed a possibility for some to be more hardy than their parents; but we maintain, that practically there cannot be an alteration made in the power of a plant to endure heat or cold. The same plant that has been tried down to the lowest degree of cold that it can bear, will, by gradual increase of temperature, be made to bear as much heat as ever it did; and by the same gradual plan of lowering the temperature, it may be brought back again to bear all it ever did bear of cold.

Nobody can dispute the ill effects of sudden transition from heat to cold, and vice versa; but it applies alike to all plants, hardy, half hardy, tender, and tropical. The

sturdy oak would be victimised as readily as the delicate orchidaceous plant, by the sudden change of temperature, and its nature would be nevertheless as little changed as if it had remained in its native forest.

We admit, however, that the constitution of a plant may be injured, that is, that a plant may be got into an unhealthy state, and by no means sooner than by sudden change of temperature; that it may, in fact, be so damaged as not to be recovered, but to linger on in ill health a considerable period, and perhaps eventually to die; but this does not make it a tender plant, it only renders it a sickly one. We have seen the constitution of a plant damaged by excessive propagation, and with great difficulty, some of the progeny by cuttings recovered, but we have seen others that never recovered, and their cuttings and layers continued the same sickly, weakly character that distinguished the parent; but still the fact had nothing to do with the powers of the plant to endure cold or heat. A plant, whether tender or hardy, may be healthy, and it is on healthy subjects alone that we can place any reliance in the trial of what a plant can bear.

The question of acclimatizing plants, therefore, is only tenable if we put another construction on the word, and instead of using it as meaning the *making a plant more hardy than it naturally is*, use it in the sense of *proving how hardy a plant naturally is*, for such is all we can do.

The first *Aucuba japonica* that ever reached this country, would have stood out of doors just as well as the last; all that had to be avoided was sudden change, and which no plant will bear. Every day experience shows us, that sudden alteration of temperature is mischievous. If we want to force a rose or an American plant, we dare not take it into a hot stove at once, for they would fail; but first in a cold pit, then in a green house, next in a moderately warmed pit, and lastly in the stove, they will do just as we wish them to do, and according as we hasten them, so do they come earlier; but when they are in flower, if they are brought suddenly into the cold, they would irrecoverably fade, so that we

are equally called upon to reduce the temperature gradually; nevertheless the rose and the American plant will stand just as much cold as ever, so that we reduce their temperature by degrees. So much for acclimatizing.

ENGLISH AND AMERICAN LANDSCAPE GARDENING.

IN a number, per last steamer, of the *Chronicle and Agricultural Gazette*, the first English horticultural periodical of the day, edited by Professor LINDLEY, we find the following article, which we copy, not for the purpose of calling attention to the commendation bestowed on one of our works, but to throw a little light on the nature of the criticism itself:

JOHN BULL looks at brother JONATHAN with a strange compound of feelings. He dislikes him as a rival; he loves him, and is proud of him, as being, after all, of his own flesh and blood. But whenever, in science, art, or literature, JONATHAN treads rather sharply on the heels of JOHN, the said JOHN bellows out most lustily.

Of all the Arts in the Universe which were likely to be the ground of competition between progenitor and descendant, Landscape Gardening would, in this case, seem to be the last. And yet, *our American brethren, so far from being behind us in skill, enthusiasm or execution, seem to be taking the lead most decidedly.* Whatever books our own Landscape Gardeners have put forth, have been few and far between; until the time of REPTON, they have rarely been practical treatises: and the volume which contains the whole of his publications is rather a combination of separate essays, than an elaborate and comprehensive treatise on the whole subject—laying down great principles—setting forth needful details—and abounding in illustrations from his own experience. But the date of his last work, as originally published, is not more recent than July, 1816. Between that time and this, Landscape Gardening has languished so grievously that no publication of any eminence has appeared.

There is now lying before us a thick octavo volume of about 500 pages, entitled

“A Treatise on the Theory and Practice of Landscape Gardening, adapted to North America.” It is by “A. J. DOWNING, author of ‘Designs for Cottage Residences,’ etc.”* The volume itself is beautifully got up. It is full of admirably executed illustrations—representing very numerous landscape gardening and architectural effects. It had reached its second edition in 1844, although an expensive work: a consummation which a similar treatise published in England by an English landscape gardener, could scarcely have hoped to reach. It is a singular composition altogether. There is much error in the reading of the past; there is a slavish admiration of the late Mr. LOUDON, who, whatever his merits in other respects, was not only a very crotchety man, but peculiarly so whenever he attempted an approach to Landscape Gardening; and yet as might be expected from a man of any talent, engaged in laying out beauties in scenery so singular, and even sometimes wild, there is a vigor of thought and a homely strength of expression, combined with a correctness of taste, which would put to shame many a professing landscape gardener of the present day.

As to his “Historical Sketches,” of the science in this country, the less said the better. It is done clumsily, and abounds in errors as to fact. It is when “his foot is on his native heather,” that he shakes off every such encumbrance, and speaks out plainly and well. At present we shall notice nothing more than what we may term his ground plan—the outline of his principles. These are summed up at the close of his chapter “*On the Beauties and Principles of the Art* :”—“In this brief abstract of the nature of imitation in Landscape Gardening, and the kinds of beauty which it is possible to produce by means of the art, we have endeavored to elucidate its

* Wiley and Putnam, New-York and London, 1844.

leading principles clearly to the reader. These grand principles we shall here succinctly recapitulate, premising that a familiarity with them is of the very first importance in the successful practice of this elegant art, viz. :—

“1. THE IMITATION OF THE BEAUTY OF EXPRESSION derived from a refined perception of the sentiment of Nature.

“2. THE RECOGNITION OF ART, founded on the immutability of the true, as well as the beautiful.

“3. AND THE PRODUCTION OF UNITY, HARMONY AND VARIETY, in order to render complete and continuous, our enjoyment of any artistical work.”

In admiring these great principles, however, we must not forget that the application of them must necessarily be very different here and in America. *Here* the Landscape Gardener has almost entirely to create. *There*—when a villa or a mansion is erected near the banks of some magnificent river, or on the skirts of some equally noble forest—surrounded by native plants and flowers, which you admire as you tread the rich green sward—the first skill to be shown is not in Creation—but in Removal, in clearing away superfluous objects, and so making the views on all sides marked by UNITY, HARMONY AND VARIETY. The two processes are obviously opposed to each other—as opposed as are destruction and creation. But it is equally obvious that the task of the English landscape gardener is in the same proportion more arduous than that of the American; while it is manifest he must have to wait during a far longer time for the development and maturity of the plans which his taste has designed. In other respects, however—so far as original taste is concerned, Englishman and American, although starting from different points, ought to arrive at the same goal.

So much for the present. Details will come forth hereafter. And then, most excellent JOHN BULL, you will see that this is no time to fold your arms, and loll in your chair, as if the race had been won, and the prize already yours. You have not gained the victory, nor the prize. Your affectionate brother JONATHAN is as active as his own vigorous youth, and the sight of magnificent

scenery around can make him. He is day by day forming many a home scene of mingled grace and splendor, while you are content to place yourself entirely in the hands of *professing* landscape gardeners; and lazily permit them to surround your mansions with scenes and views as ugly as their own taste is false.

We confess the praise bestowed on our *Landscape Gardening*, and the rank given it by the author of this article, have startled us as much as it would do to hear that the French nation had suddenly discovered and admitted that the English are a civilized people, and do not wholly live upon *ros-bif au naturel*!

Dr. LINDLEY, undeniably the most distinguished botanical and horticultural writer in Great-Britain, is no less remarkable for his high toryism, and the “cold shoulder” which he always turns to America. We are not sure, indeed, he will ever forgive “the colonies” for breaking with the mother country, and declaring themselves free and independent; and we are quite confident, from the tone of certain little replies to correspondents, etc., in the *Chronicle*, that often, when Dr. LINDLEY thinks of us,

“Disdain and scorn
Ride sparkling in his eyes.”

We are glad to see, by this article, that little by little we are earning better opinions from our transatlantic brother—and we assure him, if he will only leave the University of London, and his herculean scientific labors for a short time, and come over and pay us a visit, we will show him some results that will disabuse his mind of a score of lingering prejudices. He cannot but be gratified to examine a country where eighty per cent. of the whole population is devoted to agriculture; where the total amount of agricultural produce for the present year will exceed *seven hundred millions of dollars* in value; where the pro-

gress in rural architecture and rural taste, has been more rapid within the last five years than in any country in Europe, (England hardly excepted,) in fifty; and where his own *Theory of Horticulture* is better known and far more widely circulated than in Great Britain. We do not state these facts in the spirit of boasting, but because we know sturdy, honest JOHN BULL will not respect JONATHAN till he finds he is *respectable*.

Our friend, the late Mr. LOUDON, was, Dr. LINDLEY tells us, a "crotchety man." Yes, his crotchets, that found little favor in the eyes of the latter, were these—that he was no church-and-state man; that he believed in the largest liberty of opinion; and that he was an ardent and unflinching advocate of the rights of the laboring classes. In all his works we see most strongly marked his desire to raise the British working man, so long degraded by the sway of caste, to his proper and natural position. To this end, he not only designed and published plans of cottages and grounds calculated to improve the social, physical and moral condition of the working class, but he held up to public censure those in high places, who forced their dependants to live in houses more comfortless than those of their domestic animals; while he commended in his periodicals those who respected the natural rights of man, and understood the moral obligations attached to the possession of large wealth.

Mr. LOUDON's taste was by no means perfect in landscape gardening or architecture. (It would be difficult to say whose

is.) We have expressly stated in our *Landscape Gardening* that, "as an artist he is deficient in imagination," but we consider him as being the most *philosophical* writer on the subject that any country has produced. He never suggested an improvement in grounds without giving a good and sufficient reason for it, and he did more to popularise and disseminate general ideas of correct taste, than any other writer whatever. Indeed, his works are so well known and appreciated in America, that this explanation seems almost superfluous.

That our "Historical Sketches" of landscape gardening in Britain, are not satisfactory, in the eyes of Dr. LINDLEY, we regret. Luckily for our reputation, it is the portion of our work which has no claim to originality, and as it was entirely compiled from standard English works, the "errors as to fact" must be sent elsewhere for correction.

Dr. LINDLEY intimates truly, that English works on Landscape Gardening rarely or never reach a second edition. We are glad to be able to say that a *third edition* of our volume will soon be put to press, although the last edition was one of double the usual number. We state this, not as a proof of the merits of the work, which abounded with defects in the first edition, and is not free from them in the second, but as the best possible illustration that there is already a much larger class in the United States, alive to the importance and value of rural beauty and rural improvement than exists at the present time in England.

LARGE PEACHES.—The Ohio Cultivator speaks of a seedling from the Lemon Cling, a very handsome, red, yellow-fleshed peach, the fruit of which measured more than a foot in circumference. One weighed fourteen ounces, and four together weighed two pounds fourteen ounces. This, though not the largest ever raised, is unusually large.

COLLECTIONS IN NATURAL HISTORY.

BY J. JAY SMITH, PHILADELPHIA.

"Who loves a garden," says COWPER, "loves a green-house too," and those who admire *truly* the beauties of a garden, are apt to love the feathered songsters who cheer them in spring and autumn. Under this impression, your readers will probably be interested to learn of a *Collection of Birds*, just acquired by the Academy of Natural Sciences in this city, the history of which is highly interesting.

Dr. THOMAS B. WILSON, a native of this city, has lately purchased the celebrated collection of birds called, the "Rivoli Collection," made by the DUKE OF RIVOLI, the son of MARSHAL MASSENA, in Paris. He first purchased a part of the Duke's museum, amounting to eleven thousand specimens; a second purchase brought over two thousand five hundred. He has since procured the "Australian Collection," made by a scientific Englishman, who is writing a great work on the ornithology of that strange and interesting country, and to make the series complete, he has just received the collections of Leyden and one from Lyons. Altogether, he has thus assembled *twenty thousand* specimens, without counting a single duplicate, of which two thousand have been discarded.

With extraordinary liberality, Dr. WILSON has deposited the whole in the Academy, and has, in the handsomest manner, given a large sum to increase the size of the room, and to make suitable, nay elegant cases for their reception. CHARLES LUCIEN BONAPARTE, the ornithologist, pronounces the Academy's collection, the greatest and most complete in the world, and Dr. GRAY may well have asserted, in a late lecture in Boston, that Philadelphia is now the Mecca

of science, to which pilgrimages must be made by the student of nature.

These birds have cost Dr. WILSON *twenty thousand dollars*; in addition, his donations for building and cases, have amounted to *sixteen thousand* more. But his liberality does not stop here; every vessel from Europe brings to the Academy the best, rarest and most costly works on science, that can be procured; so that the sum of fifty thousand dollars may safely be set down as the aggregate of his donations. Here, you might reasonably suppose the catalogue to stop; but he also maintains two young and enthusiastic naturalists to take charge of these valuable treasures.

We, in Philadelphia, do not boast as much as some of our neighbors, but an attentive observer cannot fail to congratulate our city and the country generally on the spirit and taste which governs the members of the Academy. They previously possessed DE SCHWEINITZ's and other celebrated collections of dried plants, and Dr. S. G. MORTON's unrivalled *musée* of comparative anatomy, which includes the greatest number and variety of specimens of the human head of any other in the world, together with other curiosities, books, minerals, etc., etc., of extreme value. I ought to add that the rooms containing all these things, are open to the public twice a week without charge. Yours. J. JAY SMITH.

Philadelphia, Oct. 27, 1847.

[We have lately had an opportunity of examining this magnificent and unrivalled collection of birds, of the beauty, interest, and variety of which, language would fail to convey the least impression to the general reader. We hope none of our readers

who love the study of nature, will fail to examine, whenever they have the opportunity, the extraordinary representation of her various kingdoms, to be found within the walls of the Academy of Sciences in Philadelphia.—ED.]

NOTES ON CURRANTS, RASPBERRIES, &c.

BY WM. R. PRINCE, FLUSHING, L. I.

IN the Gardener's Journal, (English,) an article has recently appeared, suggesting that improvements might be made in the Currant, the Raspberry, and even in the Gooseberry, by seminal reproduction. The editor also quotes from the "Midland Florist," an article written by Mr. TOMLINSON. If these two articles referred to, furnish a fair criterion as to what has as yet been done in England, in regard to the Currant, viz. that seeds of the finest varieties have been saved the present season, destined for next spring's sowing, I have to state in behalf of our own country, *that we are in the advance*. I have plants a year old, of the leading varieties of which he speaks, and also of some equal to the largest he enumerates, which he does not possess, and probably knows not of, as they are not enumerated in the latest Catalogue of the London Horticultural Society, nor in any other English publication. One of them is a *white* variety, with larger fruit than any red one that has come under my observation; and another is a *white* variety, second only to it in size, and very remarkable for its mild and pleasant flavor.

About five years ago, I took the pains to obtain a few plants of every variety of Currant and Raspberry in Europe, by whatever name called, and they have been for three years in bearing. Mr. KNIGHT's improvement of the Currant was but trivial, because he selected *an inferior variety to begin with*, and he appears to have been totally ignorant of the existence of the

very superior varieties, then much cultivated in some parts of Europe. I have *milder* varieties than his "Sweet Currant," that had existed in Europe for more than fifty years previous to the commencement of his seminal operations.

In our own improvement of the Currant, (and of the Gooseberry also,) I trust that the several native species will receive merited attention. Mr. TOMLINSON, in his reference to May's Victoria Currant, speaks of it as having been extolled to him, and "as a fine sort to save seeds from." Such is not the case. When, about four years ago, I read the announcement, that May's Victoria Currant had been exhibited by him, before the London Horticultural Society, the berries measuring half an inch in diameter, I immediately purchased a £1 sterling note, and enclosed it to him, asking him to send its value in plants to a friend in London, who forthwith transmitted them to me. I have since purchased about 150 plants, 18 of which I planted out for myself. All the plants sent to me have been so small, that I have not had a fair crop of fruit until the present season. *I am totally disappointed in regard to it.* The fruit is no larger than the old Red Dutch, with which it is perhaps identical, or a seedling, with no essential variation from that old kind. The fruit which measured a half inch in diameter, must have been enlarged by the same process as is practised with gooseberries; which is by first stimulating the plants by powerful ma-

nures, and then pruning them with great attention, and allowing but a moderate number of berries to remain upon each plant. This practice is very generally adopted in England, by growers of fruit for premiums; but it does not form a fair test of the real merit of the variety. It may be well to say, that the largest varieties I have fruited, are the White and Red Provence, French Large White, Cerise de Tourés, or Cherry Currant, and the Bangup and Naples, the two last being black varieties.

In regard to the Raspberry, we may also say that our pomologists have not been idle. Dr. BRINCKLE of Philadelphia, the well known originator of a number of highly estimable varieties of the Strawberry, and the only person who has positively hybridised the Scarlet and Hautbois families, has presented to our view the Cushing and several other beautiful and estimable varieties of the Raspberry, some of which are of a color previously unknown to this class of fruits. On my own part, I have also done something. I have above fifty seedlings of the Fastloff which have produced monstrous fruit the present season; a dozen or more seedlings of Knevet's Giant, which from analogy, I presume was the parent of the Fastloff; a large improved seedling variety of the common Red Market Raspberry; and numerous seedlings, partly hybridised, of the White American, Ohio Monthly, Franconia, and Red and White Antwerp varieties. I added to my collection every estimable European variety before commencing operations, deeming it the proper course in this, as in every other American pursuit, to adopt the climax of European attainment as the starting point for American development. I have saved the seeds with my own hands, during the present season, of every estimable variety, for further progress.

As with the Grape, so with the Raspberry, the God of nature planted but one edible species on the eastern hemisphere, whereas numerous species are scattered far and wide, on the American soil, from Quebec to Virginia.

When a schoolboy, studying the French language at Montreal, I well remember how oft in my rambles I found on the roadsides a profusion of delicious raspberries, and of a species yet utterly unknown in this section of our Union, save a few plants I cherish in my grounds, for "auld lang syne." Again, when rambling over the wilds of the Catskill, I found, in a state of native luxuriance, three varieties with which I had been familiar from childhood, in the gardens of my father and grandfather. One of these was the identical "Common Red," now so extensively cultivated for market; the second was the "Black Cap," and the third was the "American White." It is a peculiar characteristic of the Catskill varieties, and of the "Ohio Monthly," (which are all of the same species,*) that they never sucker, but propagate themselves by throwing down to the earth the extreme ends of the long shoots, which strike root, and form each a new plant, after which they detach themselves entirely. There is in Pennsylvania and perhaps farther south, a distinct species, (*Rubus pennsylvanicus*), producing large fruit about the size of the Franconia, and similar in color, being a very dark red. This invariably produces a second crop in October. [According to Torrey and Gray *R. pennsylvanicus*, so named, is only the common Red Raspberry.—ED.] In Virginia also, one or more species [varieties?]

* Mr. PRINCE falls into error, in saying these are all the same species. The "Common Red" Raspberry is *Rubus strigosus*, (Mx.) entirely distinct in foliage, fruit, and habit of growth, etc., from the common "Black Cap," *Rubus occidentalis*, (Linn.) The "Ohio Monthly," or Ohio Everbearing, is merely a variety of the latter, but one which in strong and damp soils, we think valuable. With us it produces fruit abundantly till the frosts of November stop its growth.—ED.

are found distinct from all others. Blessed then as our country is by the profuse hand of nature, shall Americans confine themselves simply to the improvement of exotic species, and neglect those presented to us on our own soil, and which are of much greater hardihood. I trust not, but anxious-ly hope to witness the same zeal displayed in regard to one as to the other, that we may, in the result of our labors, be enabled to boast improvements as numerous and wide spread as are the glorious regions of our common country.

W. R. PRINCE.

HOW TO RESTORE THE PRODUCTIVENESS OF OLD APPLE TREES.

BY H. W. ROCKWELL, UTICA, N. Y.

A. J. DOWNING, Esq.—I do not recollect of having seen any very valuable results recorded in the *Horticulturist*, concerning the root pruning of the apple. I have, however, tested the experiment, with a little variation from the directions laid down in the article of your correspondent, "How to renovate an outcast," and have had the satisfaction of seeing my most sanguine anticipations more than realized.

The experiment was performed upon three trees standing in my grounds, none of which were less than *thirty years* old. One of these trees, an old fashioned [Newtown] Pippin, and a great favorite, had borne moderately; the other two made out between them, to "get up" about a dozen apples a year, just to let me know, I presume, that they "could do it," but were perfectly indifferent *how* it was done.

I, last summer, undertook the renovation of these trees. For this purpose, I opened between them trenches, say ten feet in length, two feet in depth, and about eight feet equidistant from tree to tree. The roots which were encountered in this operation, were, of course, all cut off, the trenches filled with *well rotted manure*, and closed. I finished by giving each of the

trees about a peck of charcoal mixed with the same quantity of ashes, and now for the result. I have this year gathered from the "two outcasts," just mentioned, instead of my annual dividend of a dozen apples, from six to eight bushels apiece of as handsome fruit as you ever saw, with about the same proportion from the third, which has always been a moderate bearer. I believe the experiment has succeeded as perfectly as if each tree had been *completely encircled* by a trench, as directed in the plan for the renovation of the pear tree. It certainly is easier to be put in practice where root pruning is to be done on a large scale.

H. W. ROCKWELL.

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We commend the foregoing to the possessors of unfruitful old apple orchards. Such are not unfrequently seen, where the barrenness of the tree arises solely from their having exhausted all the elements of fertility in the soil. Forced to emit a set of new roots, and supplied with abundant nourishment, the trees quickly regain their former fruitfulness. The result of Mr. ROCKWELL's experiment proves that for the labor expended, the orchardist is abundantly remunerated.—Ed.

NOTES ON VEGETABLE PHYSIOLOGY AND AGRICULTURAL SCHOOLS.

BY D. TOMLINSON, SCHENECTADY.

It was formerly the general practice of farmers to cut off the tops of their Indian corn stalks, so soon as the corn was glazed. It is yet done by the majority of corn planters, although it has been proved by a writer in the *Cultivator*, that the loss of weight in the corn produced by cutting off the tops before the corn becomes fully ripe, is greater than the value of the tops of the stalks. This practice is continued, probably from want of faith in the proposition; and want of faith exists, because vegetable physiology is not generally understood by farmers.

If it were understood and believed, that the leaves performed the part in plants that lungs do in animals, by exposing the crude sap to the atmosphere, parting with oxygen and secreting carbon, and returning the fluid thus improved, back to the whole system of the tree, thereby nourishing and perfecting the seeds, as well as the trunks, then the growers of vegetables would understand the reason why the tops of corn-stalks are and must be useful in ripening the grain or seeds. This being the fact, the same reasoning is applicable to other vegetables. Fruit trees ripen their fruit under the action of the same laws. If the leaves which act as lungs, are taken off the trees, they must put out new leaves soon, or both the fruit and tree suffers, and if repeated must perish. I have known persons to take off the leaves from grape vines, to expose the grapes to the sun, in order to ripen them more perfectly, and add to their sweetness. This has also proved to be an error; as the grapes thereby remained unripe, sour and worthless. A neighbor of mine took off *all* the leaves from his grape vines, last year, with a view to ripen and

improve the grapes, and the vines appeared naked last spring till late, as if dead, and did not expand their foliage fully till summer. They yielded no fruit this season.

As both the wood and fruit of trees are nourished and matured by the returning sap, after it is digested or elaborated by the leaves or lungs, so it is presumed, that it is through this law, that when a variety of scions are engrafted on one trunk, they produce fruit like the stock from which they were taken. If it were not so, and that the proper nourishment was from the roots only, it would follow that the trunk would produce its own natural fruit on the various scions grafted on it, although they were of a variety of other sorts.

A friend of ours in the country, near this, a few days ago, gave us several apples, which were on the one side yellow and sweet, on the other side green and acid. They were produced by dividing and inserting in the stock, half of a bud from a Tallman Sweeting apple tree, for the sweet, and half of a bud split, from a Rhode Island Greening tree, for the acid. The fruit partakes of both kinds in each apple.* This we found to be the fact in eating them.

* This prodigy, of an apple "half sweet and half sour," is not very uncommon; we have twice found it in various parts of the country. But the explanation of the matter given and repeated above, is, we believe entirely fallacious. In the first place, it would, we think, be impossible to split two buds and unite them so as to secure a union and the growth of both; and in the second place, if they did grow, each side corresponding to each half of the bud, would produce its proper fruit. To prove this, it is only necessary to take from a pear tree a circle of bark, and replace it by another circle of the bark of the quince. An union will take place, and after a few year's growth, if the tree is cut down, and the trunk examined, it will be found that the fibres of wood underneath the circle of quince bark are *quince* and not *pear*. Hence if a bud could be divided, and made to unite with a portion of another bud, each side would be as distinct in its bark, buds, leaves and fruits, as two separate grafts.

We do not see why a fruit half sweet and sour should excite any more surprise than that every day miracle of a flower half red and half white, which may be seen in the common Four-o'clock, and several other plants.—Ed.

The numberless instances, where even a slight knowledge of vegetable physiology may be brought to bear advantageously on agriculture and horticulture, prove that an agricultural college would be most important to all cultivators, by improving them in the useful knowledge of this and other sciences, which, when understood, would be of great importance and profit to them and the whole community. It is much to be hoped that our Legislature will pass a law to establish such a college. Most respectfully,

DAVID TOMLINSON.

Schenectady, Oct. 17, 1847.

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Our correspondent's views of the importance of the leaves of plants to their growth and the proper maturation of their fruits and seeds, are correct and forcible.

That an AGRICULTURAL SCHOOL, endowed on a basis liberal and broad enough to command the best practical and theoretical talent

to be found, would be of incalculable benefit to this great state, so large a part of whose population live by the culture of the soil, no reasonable man, who gives the subject careful consideration, can for a moment doubt. But, unless this high character be stamped upon such an institution, it were better not to attempt it; for that kind of college which we hear some legislators advocating, and which would be filled with third-rate *soi-disant* men of science, and third-rate practical farmers, as teachers, would only disgust clever sons of farmers, with what would be termed a scientific education. An agricultural school, like a bank, should be tested by its working well, theoretically and practically, and therefore, none but sound scientific teachers, who understand and are capable of carrying out what they teach, ought to find a place in such an institution in the present state of our wants. —ED.

TWO TREES WORTH PLANTING.

THERE are two trees, great favorites of ours, natives of this country, and easily obtained in most of the nurseries, which are not half so generally known, admired and planted as they deserve to be. We mean the OVERCUP OAK (*Quercus macrocarpa*), and the ASH-LEAVED NEGUNDO (*Negundo fraxinifolium*.*)

The Overcup Oak, though sometimes seen growing wild in the Atlantic States, and even as far north as Stockbridge, Mass., abounds most plentifully in Tennessee and Kentucky. Its great recommendations are, 1st. Its rapid growth, being, in ornamental plantations, one of the most luxuriant of hard-wooded trees; 2d. The fine size of its foliage, which is two or three times as large

as that of most other Oaks—often, indeed, fifteen or sixteen inches long, and of a fine dark green, forming on full grown trees very rich heads of foliage; and 3d, its very large and handsome acorns, curiously tufted or fringed at the edges of the cup.

This oak is also remarkable, when young, for the corky appearance of its bark, in which it differs from other oaks, and resembles the Gum tree and the Cork-bark Elm.

As the Overcup Oak grows rapidly while young, and as it is beautiful with its fine long leaves, in every stage of its growth, we trust it will command the attention of all our readers who are planting forest trees remarkable for beauty or rarity. When full grown, it makes a noble tree of sixty feet in height, with a well shaped

* Ash-leaved Maple (*Acer negundo*) of the old botanists.



Fig. 39. *The Overcup Oak.*

spreading head. Our cut, fig. 39, represents the form of the leaf about half the natural size, and that of the acorn, of full size.

The ASH-LEAVED NEGUNDO is, perhaps, the more familiar to our readers, of the two under consideration, still it is by no means a common tree in our pleasure grounds, though we may safely say, that it deserves a place in every plantation of even a dozen of trees.

Its peculiar merits may be presented to the novice as follows: it is perfectly hardy, since, though mainly a southern tree, it grows wild even as far north as Canada; it is of exceedingly rapid growth, takes root almost at once after being transplanted, makes a thick head of foliage very speedily; and attains a height of forty or fifty feet in good soil, in the short space of twelve to eighteen years; its foliage is of a peculiar *lively, light green*, which gives it a striking and marked appearance among

other trees; while its long racemes of pale green seeds, which hang all summer on the tree, and the peculiar pea-green bark of the young wood, are all features of novelty and interest to the arboriculturist.

When we add to this, that it is one of the first trees to put on its tender green drape in the spring, that it will grow in any soil, and, that if planted out singly, there are few trees that show such a fine broad fluttering head of foliage, with a comparatively small trunk, we think it must be admitted that the Negundo well deserves to be the familiar of those casting about for species to adorn their ornamental grounds.

The leaves of the Negundo are in *threes*, like those of the Ash, which gives it the specific name it bears. Unlike many of the rapid growing trees—the Abele, Ailanthus, etc.,—the Negundo rarely or never produces suckers to disfigure the lawn or walks, where it is planted.

ON THE USE OF WATER IN TRANSPLANTING TREES.

BY GEORGE BARTLETT, SMITHFIELD, R. I.

THIS is a practice which is condemned by many gardening writers; but is their objection founded on careful experiment; or has the subject, like so many others, been prejudged? Experience and reflection have given me a high opinion of the use of water in transplanting trees, and I will give you a brief description of my method, which you may take for what it is worth.

After preparing the border for the tree, I take out sufficient earth to give the roots room to lie in their natural position. This earth is finely pulverised. One man now holds the tree in a perpendicular position, with its roots in the hole, while another pours two pailfull of water into the hole,

and a third slowly sifts the fine soil into the water, being at the same time careful to fill the outsides of the hole so as to keep the water about the tree.

This process leaves the roots exactly in the position which they occupied before removal, and it makes the earth settle about them in the most perfect manner. If the soil is fine, and if it is sifted into the water slowly, it is deposited on every side, and every part of the roots, filling all of the holes and interstices, coming in contact with the smallest fibre, and covering the surface with perfect uniformity, like the deposits of gold in galvanic gilding.

Trees set in this manner, maintain their

upright position much better than trees set by the ordinary method. If you take hold of a tree immediately after it is set, in the way I have described, you can pull it over very easily, but after it has stood a few hours, it feels as if it had grown in its new position.

Finally, I am confident, from practice, that the trees are more certain to live and

grow vigorously when water is used in this way, while they are being planted. After losing a great number of trees, I adopted this plan of transplanting, and have since set about five hundred, out of which I have lost about a dozen, and I think most of these were dead when they were removed.

GEORGE BARTLETT.

Smithfield, R. I., Oct. 7, 1847.

RURAL ARCHITECTURE—SUBURBAN COTTAGES.

WHILE there is a very great improvement visible in the better class of country houses, we observe that the dwellings of many of our villages—houses of moderate or small size, and of a suburban character—that is to say, with a little yard or area of ground about them—retain very much the old stereotyped form.

In a tour, we made recently through some of the most thriving and prosperous parts of New England, we were much struck by the almost exclusive employment of the rectangular wooden cottage, smaller or larger, represented in our frontispiece, fig 37. Passing over the Western railroad, to Boston, village after village is composed almost wholly of this kind of cottage, so that by the external physiognomy of the dwellings themselves, it is difficult for a stranger to detect characteristic features by which to fix any one of the smaller places in his memory. It would be easy to criticise the style of this cottage externally—for though the effect produced is meagre, yet the employment of cornices and pilasters sufficiently indicates that there is an attempt to produce something agreeable to the eye. Instead of pointing out defects one by one, we prefer to offer a very rough sketch of a mode of varying the exterior of a suburban or village house of this kind,

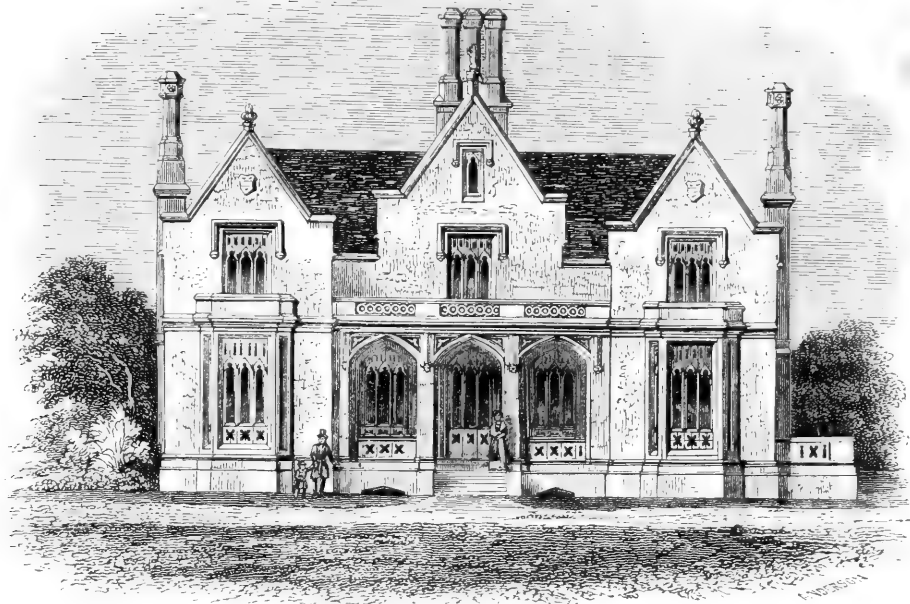
without altering its shape or accommodation—both of which may, no doubt, also be greatly improved. (Especially do we object to the too great number of windows in a house of this moderate dimension.)

In fig. 38, we have shown how, at precisely the same expense, this kind of dwelling may be erected so as to be in more correct taste architecturally, and afford at the same time more comfort to its inmates.

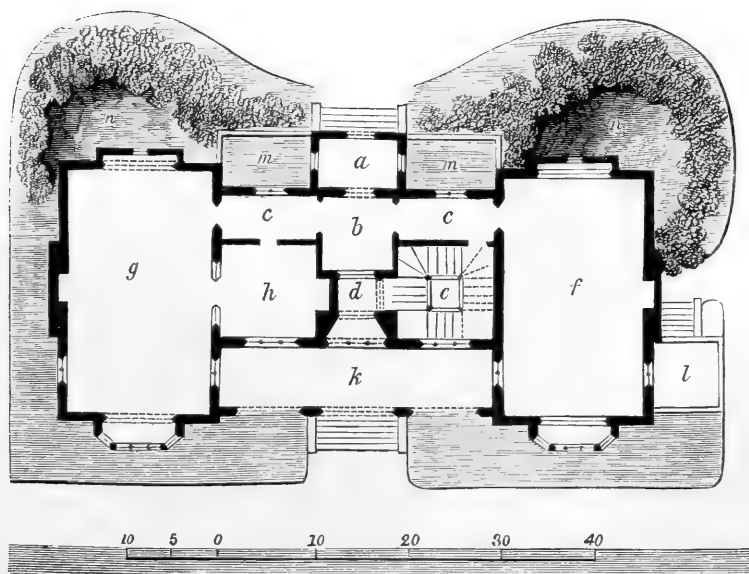
It appears to us, that in designing a building, a great deal of the success attained will depend on a correspondence between the style chosen and the material employed. That is to say, for stone or brick, a heavy style—and for wood, a light style, should be chosen.

Now the cornice and pediment, with the angular *antæ* or imbedded pilaster, employed in what we might call the New-England cottage, properly express *stone*, as they are forms which originated in the use of that material. But the projecting roof, supported on light brackets, naturally grows out of the employment of wood, a lighter and more easily wrought material.

This projecting roof gives as much character and expression to a rectangular wooden cottage, as can possibly be given in any consistent and simple way. Besides, by shading, during a part of the day, the upper



DESIGN FOR A SUBURBAN VILLA



GROUND PLAN.

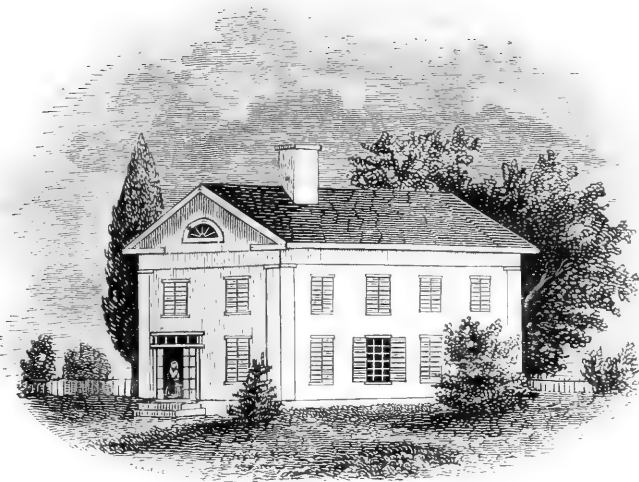


FIG. 37. THE NEW ENGLAND SUBURBAN DWELLING

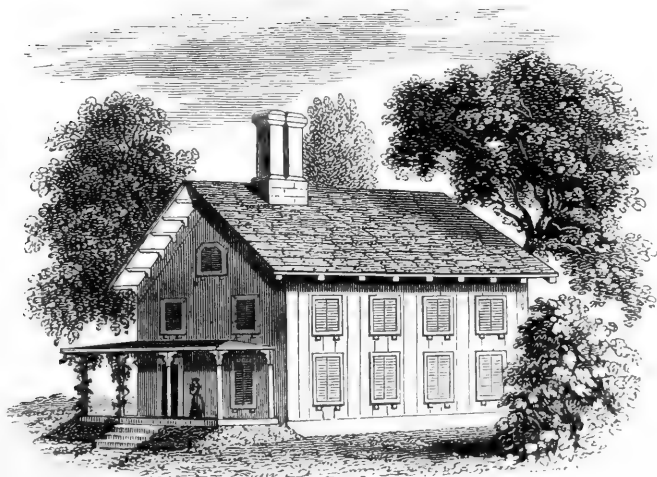


FIG. 38. DESIGN FOR IMPROVING THE SAME.



story, it renders the rooms of that story more agreeable in the summer season, and protects it somewhat from the violence of storms in inclement weather.

We have added a piazza or veranda to this house, of the simplest and least expensive form, both as giving importance to, and sheltering the front door, and as adding greatly to the beauty and significance of the house as a dwelling. A house in which the front door is bare, is not always easily distinguished from an office or any place of business. The piazza at once designates it as a dwelling house.

The *vertical boarding*,* represented in fig. 38, we prefer greatly to the *siding*, which is in almost universal use in New-England. It has an expression of more firmness and durability than the thin siding, and really is much more lasting, warm and effective, as a protection against the weather. This slender "clapboarding" gives a wooden building a character, perhaps the

farthest possible from that of the permanence and *substantiality* most befitting a dwelling house.

The taste that dictates white paint, with bright green blinds, still holds supreme sway over the exterior of the New-England cottage. How much more agreeable to the eye would all these new villages be, if they were *toned down*, a few shades only, by the admixture of a very little gray, drab, or fawn colour, when these dwellings are being painted. We would not destroy their bright and cheerful appearance—but we would in this way banish the glare and rawness that is, in some of the villages of most recent and rapid growth, really harsh to one's eyes.

As we remarked, that among the *best* houses, even in those villages, *neutral tints* begin to be employed, we hail it as the harbinger of a more enlightened taste in this respect, that will soon pervade the public generally.

THE RULES OF AMERICAN POMOLOGY.

IN a late number, we called the attention of all persons interested in the production, cultivation, and propagation of good fruit, to the imperative necessity of some reform in the matter of naming, describing and introducing new varieties to public attention.

We endeavored to point out the perplexity and confusion which had already arisen, and which in the future was likely to be multiplied indefinitely, from the manner in which fruits of little or no merit are brought forward, named and disseminated, to the manifest injury of the public, and the complete subversion of every thing like scien-

tific precision or correctness in Pomology itself.

We announce, therefore, with no little satisfaction, that three of our leading horticultural societies—those of MASSACHUSETTS, PENNSYLVANIA and CINCINNATI—have, since our last number, unanimously adopted a series of *Rules for American Pomology*.

These rules, framed very nearly in accordance with the hints thrown out in the article on *Pomological Reform*, in our October number, are calculated to stamp a character of scientific precision and accuracy on the nomenclature and description of fruits, which will make Pomology rank, as

* Explained in our *Cottage Residences*, and the first volume of the *Horticulturist*.

it should, among other branches of Natural History, and secure the cultivator and propagator of fruits, against hundreds of indifferent kinds continually palmed upon the public, as of the first quality, by persons whose knowledge of the subject is frequently not sufficient to render them competent judges of the real merits of a new variety.

This is the first movement made on either side of the Atlantic towards fixed laws in nomenclature. Every one conversant with the subject, knows what a rank wilderness fruit catalogues had become before the London Horticultural Society undertook, some years ago, the herculean labor of collecting and proving all varieties then known. Now that so much has been done in reducing thousands of synonyms to a few *standard names*, horticultural progress demands something more. It demands that there shall be some qualification fixed, without possessing which no new fruit shall be deemed worthy of a name; that before it can be considered named, it shall be accurately described and published; and that, to guard as far as possible against errors in judgment, fruits shall be described and named only by persons rendered competent by experience and knowledge of the subject.

We learn from the Fruit Committee of the Massachusetts Society, who have been especially active in bringing about this reform, that a number of the most important societies besides, in various parts of the country, have also taken the matter in hand, and are about adopting these rules. We trust, for the sake of uniformity, and in order to give the measure the broad basis of utility which it deserves, that every Horticultural Society in the Union will immediately adopt this new code. By doing this, and by selecting for its fruit commit-

tee only skilful pomologists, they will be able to carry them completely into execution, and thus give at once high character to this branch of horticulture, which the great advantages of the United States, both as a fruit growing and fruit originating country, so earnestly demands.

The following are the

RULES OF AMERICAN POMOLOGY.*

I. No new seedling fruit shall be entitled to a name, or to pomological recommendation, which is not at least equal if not superior to any similar varieties of the first rank already known; or which, if only of second rate flavor, is so decidedly superior in vigor, hardiness, or productiveness, to varieties of the same character already known, as to render it well worthy of cultivation.

II. The originator, first grower, or he who first makes known a new native variety of merit, shall be entitled to suggest a name for such variety, which name, if a suitable one, (i. e. coming within the rules of nomenclature,) shall be adopted by the writer describing the fruit for the first time. But if the name proposed is inappropriate, or does not come within the rules, then the describer shall be at liberty to give a name.

III. No new native fruit shall be considered, as named until the same has been accurately described, in pomological terms, by some competent person conversant with existing varieties, some pomologist of reputation, or the standing fruit committee of some established horticultural society.

IV. The description shall embrace the following particulars: 1st. The form and exterior colour, the texture and colour of the flesh, and the flavor of the fruit, with the addition in stone fruits, of the size of

* We reprint the Rules as passed in Boston and Cincinnati. There is a slight variation in one or two instances in the phraseology, as passed at Philadelphia, entirely unimportant.—ED.

the stone, adherence or non-adherence of the flesh, form of the suture, and the hollow at the stem; and in kernel fruits, of the size of the core and seeds, the length, position and insertion of the stalk, and form of the eye; in peaches, the form of the leaf glands and size of blossoms; in grapes, the form of the bunches; and in strawberries, the character of the blossoms, whether staminate or pistillate: and also where there is any marked character in the foliage, growth of the young wood, or bearing tree, the same shall be given.

V. The name of the new variety shall not be considered as established, until the description shall have been published in at least one Horticultural or one Agricultural Journal, having the largest circulation in the country, or some Pomological work of large circulation and acknowledged standard character.

VI. In giving names to newly originated varieties, all harsh, vulgar, or inelegant names shall be avoided, such as "Sheep-nose," "Hogpen," etc.

VII. No new names shall be given, which consist of more than two words, excepting only when the originator's name is added. [Thus all unnecessarily long titles, such as "New Large Black Bigarreau," "Beurré Gris d'Hiver Nouveau," will be avoided.]

VIII. Characteristic names, or those in some way descriptive of the qualities, origin, or habit of fruit or tree, shall be preferred. They may be either characteristic

of intrinsic properties, as "Golden Sweeting," "Downer's Late," etc; or of local origin, as "Newtown Pippin," "Hudson Gage;" of the season of ripening, as "Early Scarlet," "Frost Gage;" of the form and colour, as "Golden Drop," "Blue Pearmain;" or which commemorate a particular era, place, or person, as "Tippecanoe," "La Grange," "Baldwin," or any other titles which may be significantly applied.

IX. All superfluous terms shall be avoided: thus instead of "Thompson's Seedling Beurre," it is better to say "Thompson's Beurre," or simply "Thompson Pear."

X. Before giving a name to a new fruit, its qualities should be decided by at least two seasons' experience.

XI. When two persons have named or described a new native fruit, then the name and description first published, if according to the rules herein indicated, shall have the priority.

XII. No person introducing new fruits from abroad, shall be allowed to rechristen the same, or give them his own name; but the same should be submitted to some competent pomologist to ascertain the true name.

XIII. In deciding the names of fruits already known and described, the latest edition of the "*Catalogue of the London Horticultural Society*" shall be considered the standard European authority; and the latest edition of Downing's "*Fruits and Fruit Trees of America*," the standard American authority.

TRANSPLANTING TREES.—Some sensible advice is given in "Maunde's Botanic Garden and Fruitist," for September, respecting the preparation of fruit and other trees for transplanting. It is there recommended that, at the end of August, a trench should be cut halfway round the tree, cutting off, of course, the extremities of the roots. At the end of September, the trench to be continued all round the tree, and the whole left open. This process, says the author, will produce an early cessation of growth, and consequently a more perfect matu-

ration of the wood, in tender trees, together with plenty of fresh fibres, by which the tree, when transplanted in November, will be speedily established. Here the performance of the operation, by degrees, prevents the shock generally given by transplanting, at the same time as additional active fibrous roots are produced to meet the circumstances. In the removal of trees or shrubs, particularly if rather large, this is doubtless a very judicious mode of proceeding.—*Gardener's Chronicle*.

CULTURE OF THE SEA-KALE.

BY D., LONDON.

THERE is no vegetable which we are more desirous of seeing in general cultivation, and which is less common in this country than the *Sea-Kale*. The following sensible practical directions for growing it, from the *Gardener's Chronicle* of Oct. 16, are therefore transferred at once to our columns—

ED. HORT.

The time is now not far distant when gardeners will begin to turn their attention to their *Sea-kale* beds, with a view to winter-forcing; many will even be preparing to have a cutting ready for Christmas. If a gentleman give orders to this effect, they must be obeyed; but it appears almost an improvident extravagance to consume the vegetable so early in the season, while there is such an abundance and variety of others still remaining in the garden; one in particular, (celery, if stewed,) quite supplying its place upon the table. The time when *Sea-kale* comes in most acceptably is during March and the beginning of April, when we are tired of winter greens, and have forgotten the taste of Cauliflowers. By growing it on the following plan, it may then be had at less expense and trouble, and of far finer quality, than that produced by any method of forcing; and no one who gives it a fair trial, will afterwards relinquish it for main crops, although he may still choose to force a certain quantity for earlier supplies.

The *Seakale* bed is to be planted, in March in straight rows, five feet asunder; the plants in each row to be eighteen inches apart. It is, of course, understood that the ground be thoroughly trenched and manured as usual. Something, but not much, is gained by obtaining year old plants from the nursery, instead of sowing the seed in the rows, there to remain. By the first method, you have a larger cutting the ensuing spring; but you may cut from your seedling plants, which will have suffered no check by removal, and will grow with corresponding vigor.

Some time in December, not too soon, when the footstalks of the leaves have fairly separated themselves from the crown of the plants, heap over each about a quarter of a peck of sea sand or wood ashes; if not to be had any light unmanured soil will do. Then earth up the plants from a trench dug along the space between the rows, exactly as if you were earthing up celery, only that no leaves appear above the top of the mound. The earth should be heaped up till it is about two feet above the crowns of the plants, and then flatted down with the back of the spade, and the whole made very smooth and neat. The long trench between the rows of *Sea-kale* will act as a drain during the dead time of winter. In the spring, when the shoots begin to push, large cracks will be seen in the bank of mould, and a trial may be made with a trowel, as soon as they are supposed to be sufficiently advanced for cutting.

The *Seakale* thus obtained is larger, more succulent, and more delicately flavored than that blanched under pots. In one case the growing shoot is constantly in contact with the damp mould, and absorbs moisture instead of parting with it. In the other the *kale* is subject to all the influences of air, though excluded from those of light, from which, however, it is only protected by a porous, imperfectly closed vessel. All the expense of pots and manure for forcing is saved; and the only objection to the adoption of this plan in all cases, is, that the crop comes in too much at once. But by having rows of *Kale* in different exposures, a difference of at least ten days may be made; and a few plants at the foot of a south wall, earthed up from the border, and merely so covered with mould that it slopes against the wall, will afford a very early gathering.

No second cutting should be attempted; not so much for fear of weakening the plants, as because the weak shoots thus obtained are comparatively worthless. The earth should be levelled into the trenches, exposing the crowns of the plant, and by

introducing some rank manure, there will be plenty of time for a crop of Cauliflowers (in single line) before the increasing leaves of the Seakale require their removal.

A caution should be given to avoid a mode of culture highly approved by many who grow or sell, but do not themselves eat Sea-kale. Instead of protecting and blanching the shoots by a covering of sweet earth, they overwhelm their beds with barrowfuls of leaves collected in autumn (oak leaves are most in vogue,) and just shovel them on one side when the crop is fit for the knife. This plan has not a single advantage over the earthing system, except indulging the laziness of the cultivator; for any decrepid old woman could sprinkle a few apronfuls of leaves over her garden, but the other requires an able-bodied man to do it properly. The plants are not a day forwarder, unless the leaves heat very much; and then the characteristic of the method is fully evidenced. If the oak leaves were gathered perfectly dry, and remained so during the whole winter, if no grass or weeds were ever intermingled with them, all might be well. But the leaves are damp, there is some green rubbish among them, and consequently a slight fermentation takes place, slight putrefaction follows, and the produce grown beneath, which delights the eye like a beautiful branch carved in ivory, disgusts the taste by a flavor as nauseous as it is undoubtedly unwholesome. I have seen Sea-kale of this kind produced at table that was quite uneatable. No wonder we now and then meet with people who have tried it only once, and do not like it.

This valuable esculent, so easy of cultivation, requiring no peculiar advantages of soil, climate or situation, well deserves to be more extensively propagated. Those who form their judgment from the estimation in which it is held in and about London, are little aware how far it is from be-

ing general in the remoter districts of Great Britain. It is admirably adapted by its hardiness to such countries as Canada, Norway and Sweden, Northern Russia, etc., where, if earthed up before the frost came, it would lie dormant under the thick snow, and be ready on the return of spring to put forth its delicious shoots. It is also fitted for those northern insular situations where the temperature never rises above a moderate degree, and where the rains of summer and the constant damps of winter would rot our more tender vegetables.

To Cook Sea-kale.—After being well washed, tie it in small bundles for the convenience of taking up, and drop it into a saucepan of boiling water, in which a little salt, according to taste, has been dissolved. Keep it boiling. In about twenty-five minutes it will be done enough, which may be known by trying it with a fork. Sir Humphrey Davy tells us that the reason why vegetables and fish should be plunged in boiling salt and water is, that this solution boils at a higher temperature than plain water, and that the sudden scalding fixes the albumen, mucilage, and other nutritive parts of the viand, instead of their being macerated and sodden, and so partly lost in lukewarm water. The most economical mode of serving Sea-kale is to lay it in a vegetable dish with a strainer at the bottom, and to send up in a small tureen any sauce that may be desired at the same time. The usual way is to lay it on sippets of toasted bread, and pour over it some white sauce or melted butter made with milk instead of water. But if the toast is not intended to be eaten, but only to serve as a draining cushion to the vegetable, and then cast out to pigs, or, in a town, probably to the kennel or dust-hole, such a wasteful proceeding is, to say the least, culpable, while so many of our fellow-creatures are perishing for want of a like morsel.

London, 1847.

D.

PROF. LEIBIG AT HOME.—If “republics are ungrateful,” some of the European governments are not. The following, which we quote from one of Mr. HORSFORD’s foreign letters to the *Cultivator*, shows that the distinguished chemist—now BARON LEIBIG—is appreciated at home.

“The little farm, called *Leibig Heights*, commands a fine view of Giessen and its surrounding points. Near this little farm the forest director is now laying out a net-work of walks through a

grove of several hundred acres of pines. The expenditures are made by the city—a tribute of respect to the genius whose farm has made this little town known throughout the world. There can be no objection to my mentioning here, that the government of Hessa pays all the expenses of postage, and all the cost of transport of matters connected with chemistry that would otherwise fall upon Prof. LEIBIG.

REVIEW.

TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY. *Volume I., Part 1, large octavo.* [34 pages and 28 pages of Proceedings.] Boston. Published for the Society, by W. D. Ticknor & Co.

WE announced early last spring, the prospectus of this work, and are happy to find the first part now before us.

The Committee of Publication apologises for the delay, in issuing the work so long after the time fixed for its appearance. "This delay has arisen from an anxious desire to have *plates* in a style of excellence much superior to that of those which now accompany it. After infinite trouble and disappointment, the Committee feel satisfied that the process of *chromolithing*, in its present state, is not adapted for a work of the character which it is determined to stamp on the Transactions of the Massachusetts Horticultural Society, or to give even a faint idea of the beautiful drawings made by their artist, Mr. W. SHARP. While, therefore, the Committee regrets extremely that it is obliged to issue the present number with chromolithed plates, it has resolved not only that the plates of the future numbers shall appear in a very different style, but that, if possible, those of this first number shall be reproduced in a uniform manner."

These are fine plates, richly coloured, and more carefully executed than those in Mr. HOVEY's serial, though, as the Committee so honestly and frankly state, not with that fidelity to nature, and delicacy of tint, which characterise the best English and French coloured plates, done by hand. This defect, however, we are glad to see, will be remedied hereafter.

The plates consist of the two almost perfect seedling Camellias raised by the Pre-

sident of the Society, the *Van Mons Leon le Clerc* pear, and the *William's Favorite* and *Baldwin* apples.

The letter press comprises excellent descriptions of these flowers and fruits, a preface by the Corresponding Secretary, an article on the *Character, History and Culture of the Pear*, by GEN. DEARBORN, one on the *Superiority of Native Varieties of Fruits*, by A. J. DOWNING, and twenty-eight pages of the proceedings of the Society.

The letter press is most admirably executed on fine heavy paper, with unimpeachable type and margins; and we congratulate the Society, certainly the most energetic and vigorous in its management in the country, on having fairly commenced so promising a series of Transactions, which cannot but increase very largely its sphere of usefulness.

From Mr. TESCHEMACHER's prefatory remarks, we quote the following paragraphs:

"Independent of the pleasure enjoyed by the sight of them, it will not be difficult to show, that, like Fruit and Vegetables, Flowers may be considered as articles of considerable trade, and are, therefore, of importance in a commercial point of view. Civilization bids us mingle the ornamental with the useful; and the pleasures of the eye, though not so indispensable, are of a much more refined nature than those of the mouth. There is no reason why the overflowings of wealth may not pour forth a grateful and refreshing stream into the lap of floricultural industry, as well as into that of the ornamental branches of the industry of the loom, or into that of the decorative arts of sculpture and painting; none why the drawing rooms of the wealthy should not be rendered attractive by

elegant flowers, as well as by rich flowing drapery, or by the choicest productions of the chisel or the pencil. And as the taste for horticulture advances, few will be found without the desire to see their habitations environed with the ornaments of the forest; with some of the vast multitude of elegant shrubs and climbers, or with perennial and annual flowers, a gay assemblage of which so highly enhances and increases the pleasures of the spring, summer, and autumn—

‘What were life without a Rose?’

“This feeling will be well understood by those already interested in the culture of flowers; others may rest assured, that examples are exceedingly rare, of men once engaged in Floriculture ever giving it up but with their latest breath.

“A pretty strong proof, however, of the commercial value of these floricultural pursuits is afforded in the instance of the two exquisite seedling Camellias, the figures of which adorn the pages of this first volume of the Society’s Transactions. They were obtained in the conservatories of the President, M. P. WILDER, Esq., by the persevering application of the scientific principles of hybridization laid down by Herbert. He sold his stock of these two seedlings to J. L. L. F. Warren, for one thousand dollars, and Mr. Warren has since nearly tripled this original price for them in Europe. Nor need this remain a solitary instance, for there is, perhaps, no climate in the world so admirably adapted to produce perfection in seed as this, consequently nothing is wanting but industry, care and ingenuity in the selection and cultivation of flowers to enable us to produce the finest displays of what are termed florist’s flowers. To the President for these Camellias, and to Mr. Feast of Baltimore, for Roses, have been decreed the highest rewards of the Society.

These will, no doubt, prove strong incentives to this pursuit.

“Although the description and delineation of our native fruits and flowers will be the most prominent features of the Transactions, it is hoped that the Society will soon be enabled to offer such premiums for papers, to be inserted in their volumes, as will ensure communications on the best methods of cultivating various vegetables. There are many delicious esculents, which are by no means common, and some yet to be introduced. The fine curled endive delicately blanched, and the Scotch kail, do not yet decorate our autumnal markets. Experiments of the writer have shown that they can be cultivated here in perfection, with the greatest ease; the same may be said of the beautiful large Coss lettuce. Sea-kale is almost unknown, yet it is raised for sale in large quantities in other countries, where it is considered delicious and very wholesome, and when the taste is once acquired, it will, no doubt, become a favorite vegetable. The “Couve tronchuda,”* a very large cabbage, the whole of which, but particularly the stalk of the leaf, is of a much finer flavor than asparagus, is nearly unknown. These enumerations might be extended to some length, but it is not necessary in a preface.”

GEN. DEARBORN’S article on the Character and History of the Pear, is, like every thing from his pen, ingenious and learned. He goes back to the earliest mention of this fruit by Syrian and Greek writers, and pursues its history down to the present time.

We would very gladly reprint this article entire, but its length (nearly 12 pages) will not permit us to do so. The following paragraph will show the rank which he gives the Pear, in which we believe nine-

* This is the *Portugal Cabbage* described in the *Horticulturist* for Jan., 1847.—Ed.

tenths of the Massachusetts Society will join him :

" Among all the fruits which are produced upon the earth, the highest position has been given to the *Mangostan*, which is indigenous to Java, and other islands in the Indian Archipelago ; the second has been assigned to the *Pine-Apple*, the third to the *Orange*, the fourth to the *Peach*, the fifth to the *Grape*, and the sixth to the *Pear* ; but as all these, except the three last, are natives of, and can only be reared within the tropics, and as the grape can be raised in the open air in a very small portion, if in any, of the United States, the Pear takes the second station. And if the long period of nearly ten months, during which the numerous most admired varieties are most successively matured for our tables, is taken into consideration, with the diversity of graceful forms, beauty of color, agreeable aroma and delicious flavor of many of them, which rival, if they do not surpass, the peach in those qualities, it may, with propriety, be placed at the head of the list of fruits, in all the states where the orange cannot be cultivated."

We think we cannot better demonstrate the energy and wisdom with which the Massachusetts Society pursues its laudable objects, than by recapitulating from the proceedings of January, 1847, the following handsome list of prizes offered, to elicit native horticultural productions of the highest merit—than which there is nothing

within the scope of such an institution calculated to be of such universal advantage to the country at large.

PROSPECTIVE PREMIUMS

Offered by the Massachusetts Horticultural Society, for objects to be originated subsequent to A. D. 1846, which shall, after a trial of five years, be deemed equal or superior in quality and other characteristics, to any now extant :

For the best seedling Pear, the Society's Gold Medal, value \$60	
" "	Apple, the Society's Gold Medal, 60
" "	Hardy Grape, the Soc.'s Gold Medal, 60
" "	Plum, the Appleton Gold Medal, 40
" "	Cherry, the Lowell Gold Medal, 40
" "	Strawberry, the Lyman Plate, 50
" "	Raspberry, the Lyman Plate, 40
" "	Hardy Rose, the Society's Gold Medal, 60
" "	Camellia, the Society's Gold Medal, 60
" "	Azalea indica, the Lowell Gold Medal, 40
" "	Tree Pæonia, the Appleton Gold Medal, 40
" "	Herbaceous Pæonia, Lowell Gold do. 40
" "	Potato, the Society's Gold Medal, 60

Who cannot see in the future, behind this list of prizes, a long train of fine new fruits and flowers, brought into existence by the spirit engendered by this love of horticulture, and this emulation among its devotees ? Productions, that once made known by such a Society, after the *five years' trial*, will be propagated endlessly until they enrich every garden in the land. With such a view of the benefits, stated in their simplest form, and saying nothing of the *morale* of this refined culture of the soil, it is impossible not to find great cause of gratulation in the prosperous existence and career of such institutions as the Massachusetts Horticultural Society.

PELARGONIUM LUCIA ROSEA.—This variety is, in its habit and appearance, much like one of the class called "scarlet" pelargoniums. It is a very compact growing plant, with short jointed stems, and good sized leaves, of a soft velvety character. The flower stems are strong, and grow erect, so that the trusses of bloom are brought well above the foliage ; the colour of the flowers is a most delicate soft pink, or peach blossom, with a lovely white eye—altogether a distinct colour among pe-

largoniums. It is a gem for the flower garden, being not only perfectly distinct, but also superlatively beautiful. Sometimes, when kept in pots, and not very freely grown, we have observed it to produce but small trusses of bloom, but this improves when it is growing freely in the open garden. Probably, however, it may in time be improved on ; in the mean time, it may chiefly be valued for its novel colour.—*London Hort. Mag.*

FOREIGN NOTICES.

HYACINTHS IN POTS AND GLASSES.—The cultivation of the *Hyacinth* has been so fully explained in previous numbers, that we find nothing to add to the advice which has been given, except one thing, and that is never to use cold water. When the bulbs are first placed in the neighborhood of the water, let it be lukewarm; whenever fresh water is added, whenever it is changed, let it still be lukewarm.

Those who have not studied the effect of this kind of management, will hardly believe how great the difference is between the same sort of hyacinth drenched from time to time with ice-cold water, fresh from the pump or cistern, and that which is nursed with tepid water. The effect is rendered still more beneficial, if four drops of a saturated solution of sulphate of ammonia are added to every pint of water. This is equally the case, whether the bulbs are in glasses of water or pots of earth. Under ordinary management, the roots are chilled every time that water is applied. The Scythians are said to have thrown their children into their rivers, even although frozen, as soon as they were born; and this practice is applied by ninety-nine people in a hundred to their hyacinths. They may depend upon it, that whatever may have been the case with Scythian children, oriental hyacinths cannot bear it. Each application of cold water to their roots gives them a check, and each check tends to diminish their capacity of flowering well.

It is doubtless true, that hyacinths in the open border flower very well without warm water; but then we are to remember that the roots of the bulbs formed in the ground are hardy, and have never been accustomed to warmth; but in a sitting room the roots are born in warmth, nursed tenderly, and quite in a different condition from those which are formed out of doors. The rot in hyacinth bulbs is not unfrequently caused by the neglect of this principle; already in a languishing state, from some original debility, such bulbs require more warmth than usual, and receive less. The tender tissue, chilled by the icy fluid that bathes it, dies and putrefies. It assumes the condition of the potato murrain. Had warmth, the great stimulant of all vitality, been applied, the tissue, tender as it was, would have been excited into action, and soon would have revived under its genial influence.

The best proof of this is the fact that a hyacinth bulb, in a state of rapid putrefaction, while kept in contact with the cold water of a hyacinth glass in a dwelling house, entirely renewed its vitality when removed to a warm situation. The annexed cut [omitted] represents a case of this sort:—In this instance the decay had eaten completely through the base of the scales into the very heart of the hyacinth, which was literally putrid. The foul slimy matter was wiped off, and the bulb was placed, its base upwards, on a layer of warm sand, covering the bottom of an earthen pan. The sand was moistened with water of the temperature of eighty degrees, or thereabouts; a bell-glass was placed over the bulb, with its edges pressed into the sand; and

the apparatus was placed on a shelf near a north window, about four feet above an Arnott stove in constant action. From time to time warm water was given by pouring it upon the sand between the edge of the earthen pan and the side of the bell-glass. Decay was immediately arrested; for some time the bulb remained dormant; but by degrees healthy granulations made their appearance, displacing the decayed matter; and in a few weeks a fine crop of young bulbs sprouted forth on the surface of the scales, and on the edges of the healed up sores.

This result, which was extremely curious, was entirely owing to the stimulus exercised by warmth upon the flagging vitality of the bulb. Had not the warmth been applied, the whole of the plant would soon have passed into a state of irremediable decomposition. Nothing could have been more interesting than to watch, day by day, the organic forces of the dying plant exercising their plastic power in the development of tiny scales out of the fleshy tissue of the hyacinth; to see those scales arrange themselves in the form of miniature bulbs, one sprouting out of the bosom of the other, but still nestling close within it; and at last to behold a new brood of tiny hyacinths crowding the space, which so lately was the seat of corruption and death. It was a verification of the fable of the dragon's teeth.

Another thing that warmth will do, is to compel the unwilling hyacinth to form roots. How often does it happen that the bulb, when placed over water, pushes forth leaves, without roots. If this is allowed to go on, the plant becomes top-heavy, and tumbles out of the glass; or if that is prevented, still it flowers badly. Whenever this is remarked, additional warmth should be applied. A convenient way of proceeding is this. When a hyacinth bulb shows no sign of putting forth roots at the same time that its bud begins to swell, fill the glass with milk-warm water, to within an inch of the bulb; wrap up the whole in warm flannel, and station the glass thus prepared in a warm closet. This operation will not need repetition, for in general roots will come out in three or four days afterwards. As soon as the roots are a quarter of an inch long, add as much warm water as will just touch the tips of the roots, and again leave the plant still wrapped in flannel, till the roots are half an inch long. When that is the case, danger is over; the flannel may be removed, the bulb exposed to light, and no other care is requisite, than that of still guarding against cold water. *Lindley.*

EIGHT CONSERVATORY CLIMBERS.—1. *Combretum purpureum*, or, as it is now called, *Poterea coccinea*, a half shrubby plant, with oval leaves, and branching spikes of scarlet flowers, with conspicuous stamens; it will flower all the summer by stopping the strongest shoots occasionally. 2. *Echites suberecta*, a beautiful yellow flowering plant, which has generally been grown in the stove, but will answer well for the conservatory by spur-pruning, like the vine; it is a very strong grower.

3. *Ipomœa horsfalliæ*, a splendid plant, with deeply lobed leaves, and bunches of crimson blossoms; should have a warm close position. 4. *Mandevilla suaveolens*, a very free grower, with hairy oval leaves, and bunches of white deliciously fragrant flowers. 5. *Passiflora racemosa*, a splendid crimson passion flower, which will flower freely nearly the whole year; does best grafted upon one of the hardier sorts. 6. *Plumbago capensis*, an easily grown plant, with long slender stems, bluntish leaves, and good sized bunches of pale blue flowers; may be had in bloom from April to November, by cutting back some of the strongest shoots in summer. 7. *Stephanotis floribunda*, a beautiful evergreen plant, with dark green, shining, blunt oval leaves, and bunches of white deliciously scented blossoms; it is a splendid thing when planted out in a conservatory border, and grows very fast. 8. *Tecoma jasminoides*, a very free flowerer upon the young wood from July to the end of October; it has much divided leaves, and bunches of white flowers, with a crimson centre.—*London Hort. Mag.*

MANURE-WATER FOR POT PLANTS.—Many—indeed most—plants grown in pots may, at particular periods of the growth, be advantageously treated with liquid manure; these periods are chiefly during the time of making vigorous growth, and of blooming. Inexperienced persons, however, are liable to do material injury from using it too strong or too often; or they fall into the other extreme, and derive no benefit from the application. A very useful liquid manure for pot plants may be made by putting the following ingredients into a hogshead of rain water:—two pecks of sheep or deer dung, one peck of soot, and two quarts of Potter's guano; these ingredients are first to be well mixed up to the consistence of paste, with boiling water, and then mixed with cold water. Stir the mixture frequently for a day or two, and then throw in a quart of quicklime; when the liquid has become clear it is fit for use. For all strong growing plants this may be used daily, or every other day—applying it diluted with about one-third of clear water. For heaths, and similar delicate rooted plants, and even for orchids, it will prove beneficial, but to these should not be given oftener than once a week. As before observed, it is only to be used—at least by the inexperienced—during the periods of growth and blooming.—*Lond. Hort. Mag.*

COLORÉD GLASS FOR HOT-HOUSES.—It has been found that plants growing in stove houses often suffer from the scorching influence of the solar rays, and great expense is frequently incurred in fixing blinds to cut off this destructive calorific influence. From the enormous size of the new Palm-house at Kew, it would be almost impracticable to adopt any system of shades which should be effective—this building being 363 feet in length, 100 feet wide, and 63 feet high. It was therefore thought desirable to ascertain if it would be possible to cut off these scorching rays by the use of a tinted glass, which should not be objectionable in its appearance, and the question was, at the recommendation of Sir William Hooker and Dr. Lindley, submitted by the Commissioners of Woods, &c., to Mr. Hunt.

The object was to select a glass which should not permit those heat rays, which are the most active in scorching the leaves of plants to permeate it. By a series of experiments made with the colored juices of the Palms themselves, it was ascertained that the rays which destroyed their colour, belonged to a class situated at that end of the prismatic spectrum which exhibited the utmost calorific power, and just beyond the limits of the visible red ray. A number of specimens of glass, variously manufactured, were submitted to examination, and it was at length ascertained that glass tinted green, appeared likely to effect the object most readily. Some of the green glasses which were examined, obstructed nearly all the heat rays; but this was not desired, and from their dark colour, these were objectionable, as stopping the passage of a considerable quantity of light, which was essential to the healthful growth of the plants. Many specimens were manufactured purposely for the experiments by Messrs. Chance of Birmingham, according to given directions, and it is mainly due to the interest taken by these gentlemen that the desideratum has been arrived at. Every sample of glass was submitted to three distinct sets of experiments. 1st. To ascertain by measuring off the coloured rays of the spectrum, its transparency to luminous influence. 2d. To ascertain the amount of obstruction offered to the passage of the chemical rays. 3d. To measure the amount of heat radiation which permeated each specimen. The chemical changes were tried upon chloride of silver, and on papers stained with the green coloring matter of the leaves of the Palms themselves. The calorific influence was ascertained by a method employed by Sir John Herschel, in his experiments on solar radiation. Tissue paper stretched on a frame, was smoked on one side by holding it over a smoky flame, and then while the spectrum was thrown upon it, the other surface was washed with strong sulphuric ether. By the evaporation of the ether, the points of calorific action were most easily obtained, as these dried off in well defined circles long before the other parts presented any appearance of dryness. By these means it was not difficult, with care, to ascertain exactly the conditions of the glass, as to its transparency to light, heat, and chemical agency (actinism.) The glass thus chosen is of a very pale yellow green colour, the colour being given by oxide of copper, and is so transparent that scarcely any light is intercepted. In examining the spectral rays through it, it is found that the yellow is slightly diminished in intensity, and that the extent of the red ray is affected in a small degree, the lower edge of the ordinary red ray being out off by it. It does not appear to act in any way upon the chemical principle, as spectral impressions obtained upon chloride of silver are the same in extent and character as those procured by the action of the rays which have passed ordinary white glass.

This glass has, however, a very remarkable action upon the non-luminous heat-rays, the least refrangible calorific rays. It prevents the permeation of all that class of heat rays which exist below and in the point fixed by Sir William Herschel, Sir H. Englefield, and Sir J. Herschel, as the point of maximum calorific action. As it is to this class of

rays that the scorching influence is due, there is every reason to conclude that the use of this glass will be effective in protecting the plants, and, at the same time, as it is unobjectionable in point of colour, and transparent to that principle which is necessary for the development of those parts of the plant which depend on external chemical excitation, it is only partially so to the heat rays, and it is opaque to those only which are the most injurious. The absence of the oxide of manganese, commonly employed in all sheet glass, is insisted on, it having been found that glass, into the composition of which manganese enters, will, after exposure for some time to intense sunlight, assume a pinky hue, and any tint of this character would completely destroy the peculiar properties for which this glass is chosen. Melloni, in his investigations on radiant heat, discovered that a peculiar green glass, manufactured in Italy, obstructed nearly all the calorific rays; we may, therefore, conclude that the glass chosen is of a similar character to that employed by the Italian philosopher. The tint of colour is not very different from that of the old crown glass; and many practical men state that they find their plants flourish much better under this kind of glass than under the whitest sheet glass commonly employed.—*Gardeners' Chronicle*.

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HOLKAM, THE SEAT OF THE EARL OF LEICESTER.—This magnificent place has been hitherto known to the public chiefly for its agriculture, and the princely hospitality of its owners. Men of all countries have been here to learn the arts of rearing the best breeds of cattle, and of turning the soil to the best account; and no one doubts that the examples here given have been the means of stimulating many throughout the world to carry out similar improvements. There is, however, an additional lesson very legibly displayed here, which proprietors would do well to attend to—I mean its foresting. Trees anywhere, in good land even, are triumphs; they are looked upon as such in rich sheltered valleys, on slopes with mountains at their back; but to have them of commanding stature, in defiance of every obstruction, soil, situation, climate (a biting sea air in this instance,) is an achievement which ought at least to be noted and commended to all who have lands similarly situated. The late Sir Fowell Buxton took the hint, and not the least of his legacies was a series of thriving plantations stretched along the side of the German Ocean at Ronton and Trimmingham.

Holkam, "on an open, barren estate, was planned, planted, built, decorated and inhabited in the middle of the eighteenth century." Such is the record over the entrance door into the hall. Ceres and Sylvanus have now their temples here; and it would be difficult indeed to find an estate over which cornfields and woodlands are more judiciously interspersed. The sale of the timber alone realises about £4300 yearly.

The chief object of this notice is to draw the attention of land proprietors who have poor lands near the sea, to a grand feature at this seat, caused by the introduction of the Evergreen Oak (*Quercus ilex*.) It is here, as a timber tree, magnificent beyond example in this country, and in the greatest

profusion. Its appearance in the Holkham woods, proves two things: 1st, that the tree is well suited to dry exposed soils within the influence of the sea air, as has been frequently stated in the *Chronicle*; and 2dly, that on chalk bottoms it is entitled to a place beside the Beech. In the Obelisk wood here, a great part of which is on chalk, it is in several instances intermixed with the common English Oak, which it surpasses both in height and bulk, growing luxuriantly after the latter has ceased to thrive.

Of the Evergreen Oak as an ornamental object, especially in autumn and throughout winter, it is unnecessary to speak. The only hindrance to its more general cultivation is its high price, and the uncertainty of its growing when transplanted. I am happy to say that Mr. Gorrie, the forester here, has the merit of obviating the latter objection, and with it the former will, no doubt, be considerably modified. He transplants the seedlings about midsummer, a plan which has turned out to be completely successful. Following his recommendation, I had several hundred put into small pots in the latter part of June, and I now find that they are not only all alive, but have made a second growth. Those who are in the practice of raising seedling *Ilex*, will have observed that they complete their first growth in June, and that towards the end of the month the buds assume the appearance of maturity, the leaves becoming rigid and glossy, and that the whole plant is apparently prepared for winter. A few weeks elapse, and it is observed that they commence to shoot with renewed vigor, making in some instances about six inches of additional wood. It is during the interval of rest, therefore, that the plants should be removed. It is of course necessary to shade them from sunshine, and to water them copiously for a week or so after being transplanted.

All who visit this seat, and are interested in this tree, had better ask particularly for the *Ilex* in the Obelisk wood; for after walking forty miles, a few years since, for the purpose of seeing the best trees, those only on the lawn in front of the house were shown to me. They are certainly fine, spreading, park-like objects; but the others are majestic and forest-like, and almost justify the extravagant language of Pliny, when writing of the species as it grew about Rome. One tree in this district measures fifteen feet in circumference at a foot from the ground; another is eight feet four inches, in circumference, has twenty-eight feet of a clear bole, and is seventy feet high: a third is nine feet in circumference, has a clean bole of twenty feet, and is seventy-five feet high: another is twelve feet in circumference and covers a space of twenty-two yards in diameter.

The usual approach to this seat, on the Fakenham road, is skirted with thriving young trees of the *Araucaria* and *Cedrus deodara*, which in a few years more will be large enough to confer a striking and graceful effect. A considerable number of the latter has been raised from seed by Mr. Gorrie, and it is intended to plant them on an extensive scale, both as ornamental objects and forest trees. The *Araucaria* grows here without the slightest protection during winter; and it will be interesting

to those who are about to plant within the influence of the sea, to know that they may safely include the *Laurustinus* as a shrub which will succeed well in such places. Here it is used in some instances as a hedge plant, and in this capacity, it stood throughout the last severe winter without being injured.

The wholeylvan picture at this seat forms a profitable study. The lesson is, this great woodland, its beauty, the shelter it gives to bleak lands, and the splendid revenue derived from it, may be repeated elsewhere through diligence and perseverance. Nature is the same to all without distinction; and if we find her in any instance wearing a richer or more valuable garb than she displays over other lands similarly circumstanced, it is only because her favors have been in that instance sought in a more liberal spirit. Draining, subsoiling and manuring, are amongst the petitioners whom she always answers.—*G., in Gard. Chron.*

WHAT GREEN TEA IS?—MR. FORTUNE'S *Wanderings in China* has reached a second edition, as it deserved. The present issue contains some important additions relating to tea, the chapter on that subject having been rewritten, and much extended. Mr. Fortune is of opinion, that in China, the home consumption of tea may be estimated at eighteen hundred millions of pounds, and states, that in addition about ninety-five millions of pounds are exported.

Among other useful matter, we are glad to find Mr. Warrington's valuable and interesting paper on the chemical analysis of tea, reprinted from the "Memoirs of the Chemical Society," where it only meets the eye of chemists. This gentleman has not only removed the whole of the colouring matter, or glazing, from green tea, but he has been able to analyze the matter removed, and to prove it, by chemical evidence, to consist of *Prussian blue* and *gypsum* principally. So that in fact the drinkers of green tea, as it comes to the English market, *indulge in a beverage of Chinese paint*, and might imitate the mixture by dissolving Prussian blue and plaster of Paris in hot water. The Chinese themselves do not drink this painted tea; they only sell it!—*Lond. Chron.*

CROPS IN FRANCE.—*Paris, 4th August, 1847.*—The appearance of the Potato crops in this neighborhood is everything that could be wished, the vegetation is everywhere luxuriant, and promises an abundant harvest, scarcely any signs of disease have appeared, and even where seen so modified as to cause little or no alarm; at any other time it would have passed altogether unnoticed; in fact, there was but very little last season, compared with 1845, and now it is almost unknown.—I speak of the present moment, and the cultivation round Paris. My own observation leads me to believe that there has been a very considerable increase of ground planted this year; this was to be expected from the high price they fetched in the autumn and winter, the probable increased consumption in consequence of the high price of provisions and the many purposes to which they are applied in France; the enormous rise in the price of bread since the autumn was another inducement to plant as largely

as possible; the result has justified the experiment; the yield of the early sorts is fully equal, if not more than an average; at the present time the very best new potatoes are selling at about 1s. 6d. the English bushel, while bread is 10d. the four pound loaf; whereas, in the early part of the winter, they were selling at 3s. and 4s., and bread was then 9d., a difference so considerable as cannot fail to have effect in still further reducing the price of the main staff of life. The markets are abundantly supplied with both round and kidneys of good quality; it is doubtful if they ever were finer. I have not seen a single diseased Potato in the markets, although I have been on the constant look out; in most of the country markets they are equally good. As to the late kinds, I have, from time to time, carefully examined the growing crops, and assert, without fear of contradiction, that they are as fine as it is possible to desire, and that, at the time I write, there is no appearance of disease, or scarcely none; the foliage is everywhere green and luxuriant, a tainted leaf is rarely found, certainly not more than are usually seen from the effects of thrips and other invisible insects. I am in almost daily intercourse with persons from different parts of France, who from their position, are well acquainted with the subject, and the general belief is, that there has been, and is, but very little disease this year, that it is not upon the increase, and almost entirely confined to damp and cold soils, and entailed by planting diseased tubers. I think it is the universal opinion here that the crops of Potatoes throughout France are—1. But very little affected by disease; 2. That there will be more than an average yield; 3. That there has been a far greater quantity planted than usual.

So far the prospects are cheering; and should it please Providence to continue the fine weather for another six weeks, all hearts will have cause of thankfulness; for almost every species of vegetable production is equally abundant. The Wheat harvest is over in the south, and commenced in the north, and was never known finer. The Minister of Commerce has just made publicly known, by official returns, that there is more than an average, and the present splendid weather will permit it to be housed in good condition. As to the fruit crops, they are absolutely superabundant; the quantity of Apples, Pears, Grapes, Apricots, and Plums, are incredible; the trees are falling under them. The vintage will be abundant and of first-rate quality; the early Black Grapes are now changing color in Paris, and will, no doubt, be in the markets by the middle of the month. Good Apricots have been selling at 3 and 4 francs (2s. and 6d. and 3s.) per 100; fine green figs are now sold in the streets at less than 4d. each; it was the same with the earlier fruits, such as Strawberries, Cherries, Raspberries, Gooseberries, and Currants. During last month fine May Duke Cherries were often sold at 4d. and 1d per lb., and Currants at 1d. and 1½d per pint. *Gardener's Chronicle.*

SAVING SEEDS.—It has often occurred to me, that sufficient care has not been exercised in saving seeds of vegetables from the finest parts of the crop. If we breed live stock of whatever kind, we invariably select the parents from the best of our

flock or stud. So with regard to flowers, no one would sow seed from inferior flowers, but would select from the best specimens; and it is by following up this system, even without more crossing than is performed by nature and the bees, that great improvements have been made. Thinking the same effects would accrue from a more careful selection of *culinary seeds*, and that a much greater degree of productiveness might be attained, about three years ago I began an experiment with Long-pod Beans. I carefully selected the finest and fullest pods for seed, taking none with fewer than five beans in each. Next year I had a good sprinkling of pods with six seeds in each; these were sown for seed. The following year there were many six-seeded pods, and some with seven. Following up the same plan, I find this season many more six and seven-seeded pods, and some with eight seeds! There are still a few plants which produce five-seeded pods; and it is worthy of remark, that the five-seeded plants have seldom a six-seeded pod upon them, but all fives; on the contrary a six-seeded plant generally has nearly all the pods bearing six beans or more. As the seed-saving season is now at hand, perhaps these hints may induce others to adopt the plan. If the same thing were adopted with our grain crops, by selecting a few of the largest and best filled ears to save as seed, I have little doubt more productive varieties might be procured. *Lusor, in Gard. Chron.*

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CULTURE OF THE VINE.—Much has been written on the treatment of the Vine, and yet we may read every day of shrivelling, shanking, rust, red spider, and similar complaints, without possessing any certain cure for these evils which occur repeatedly. That a good border is an essential requisite in the production of good grapes, I think every body will admit, but at the same time I maintain that air is equally essential in maturing and coloring the crop. In forming a new border, I should recommend the soil to be excavated to the depth of three feet, not more; but the wider the border is the better; twenty feet is not too wide. There should be a drain in front, and the border should slope well to it. I would bottom with rough sandstone, or some material that would secure perfect drainage; and I would cover the latter with thin turf or peat, to prevent it from being choked up. As compost I would recommend one-fourth old mortar, bones and charcoal—the bones and charcoal to be broken, but not too small; one-fourth decomposed tree leaves, and the remaining half the topsoil of a good old pasture or common, which should at least have lain in a heap for twelve or eighteen months, and frequently turned and exposed as much as possible to frost. The whole being well incorporated, proceed to fill in the border, taking care to tread as little as possible. Rather allow the soil to settle of itself, which will render the border more porous. For planting the beginning of May is, perhaps, the best time. Plant one vine immediately under each rafter, a position in which more light is admitted to the foliage. I remember seeing vines belonging to the Right Hon. the Speaker, which reached the top of an eighteen feet rafter the same season. In this case the vines

were planted in the beginning of May. The border being now made, and the vines planted, I will give some account of their management.

I believe that houses after houses of grapes are ruined by keeping them too hot at night, and not giving them sufficient air during the day time. Mr. Mitchell, of Kemptown, Brighton, who is celebrated as a grape grower, ascribes his success entirely to extensive airing, and low temperature at night—forty to forty-five degrees is not too low for night temperature, which might be even a little lower. Abundance of air should be given as early as possible in the morning, to dry up all moisture, thereby preventing scalding and burning—evils so often complained of. Water and liquid manure are also necessary in vine culture. In hot dry weather, water every other day. The border being porous, will allow the water to pass through readily, and will carry the surface heat down to the roots. This should be discontinued when the grapes begin to colour, and at that time discontinue moisture inside; for the stalks of the berries are apt to become black if much moisture reaches them after that time. I do not hold with syringing vines after they have broken; they obtain sufficient moisture otherwise, provided the flues or pipes are frequently sprinkled. To show that air is the grand secret in grape growing, I will cite an instance. I once visited a friend who had the care of a large establishment. With feelings of pride, he showed me a house of grapes eighty feet in length which was really a grand sight. They were chiefly Muscats which had set beautifully. The house was oppressively hot, the thermometer in front registering eighty degrees and consequently at top the house must have been much hotter; I pointed this out to him, but he shook his head and gravely assured me the contrary would not do, having a cold wet border to contend with. But mark the sequel. I paid him another visit afterwards, when the Grapes were ripe; the berries were not larger than marrowfat peas; scarcely a bunch but what was shanked; and generally speaking, only the shoulders had ripened, while in a small house in which Pelargoniums and other plants had been kept, and which had been consequently well aired, the bunches were large, averaging one and a half to two pounds each. On inquiry, I was told it was the border that had produced the difference; but I could see nothing different from the other in that. In fact my friend had hoodwinked his judgment in order to retain his prejudice, a circumstance of too common occurrence. Once more then let me impress on all the necessity of giving air in abundance. This advice is no wild theory, but the result of long experience and careful observation. Finally it is to be hoped, that when Pomaise becomes better known, and its merits appreciated, we shall hear no more of many complaints which attend the present system of vine growing. *A. B. in Gardener's Chron.*

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EARTHING UP POTATOES.—I have long had doubts relative to earthing up potatoes being a beneficial practice, and I am now convinced that it is detrimental. The variety employed in my experiments is the pink kidneys. All the sets were planted at the same time, (the first week in April,) in rows

two feet apart, and eighteen inches in the rows, and taken up this day (Sept. 24,) and weighed. The average of all my experiments gives exactly an increase of one-fourth in favor of not earthing up; but some of the plots gave still more, viz., as 42 lbs. is to 31½ lbs. The experiment has been made on a sixteenth of an acre of good deep loam, with a cool moist subsoil. G. W. Johnson.

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HELIOTROPUM VOLTARIAUNUM.—*M. Thibaut, horticulteur, rue St. Maur 45, Paris*, advertises a magnificent new variety of Heliotrope, under the above name. "Its leaves are of a dark green; its flowers are very fragrant, of a deep bluish-violet colour, (white in the interior.) The panicles are enormous; planted in the open border in May, the clusters of blossoms measure from four to six inches in diameter."

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RAISING THORNS FROM SEED.—In a paper read some time ago, by one of the most intelligent Scotch horticulturists, Mr. McNAB, giving an account of a tour in North America, we find the following practical remarks on raising hedges from our native thorns, which we reprint as follows:—

"He was agreeably surprised to see such a variety of native Hawthorns, being convinced of their fitness for forming hedges, so very much wanted in this country, and which many of the inhabitants expressed a great desire to have, instead of the unsightly snake fences which at present separate the fields. But apparently they never thought that the indigenous thorns would answer for this purpose, as they talked of importing haws and white thorns from Britain. Mr. McNab gave instructions to those individuals with whom he had an opportunity of conversing upon the subject, so that they may raise thorns for themselves, as an abundant supply of seeds may be annually procured at no great distance from each settlement. As these instructions may be interesting to others, we here repeat them: 'The fruit should be gathered about the end of October, care being taken to keep the seeds of the luxuriant growing sorts separate from those of the dwarfier kinds. A pit should be prepared about one foot and a half deep, into which the fruit is to be put with a mixture of earth and sand. It should be turned several times during the following season, and if dry a little water may be added; one or two inches of soil being a sufficient covering to insure the decomposition of the pulp. During the succeeding October, a piece of ground should be prepared, and the seed sown as it is taken from the pit, pretty thick, in drills about a foot distant from each other, or in beds three feet wide. In the succeeding spring the plants will begin to appear; at which time, and throughout the season they must be kept clear of weeds. If properly attended to, the seedlings will attain a height of from six to twelve inches the first year. The following spring, the strongest plants may be either transplanted into drills, or placed where they are intended to remain as a permanent fence. The smaller

ones should be left in the seed drills or beds for another year, when they may be treated in the same manner. In forming a live fence, the ground ought to be prepared as soon as the snow disappears; by making a trench about two feet broad, and a spade in depth. Along the centre of this trench, the young plants should be put about six or eight inches apart, and afterwards well watered, and firmly trodden in. Care should be taken to protect the young plants from cattle, and to keep them clear of weeds. The second year after planting, the the thorns should be headed down to within six or ten inches of the ground, and each year afterwards switched on both sides to a centre ridge, so as to produce the shape usually termed sow-backed; hedges trained in this form, being less liable to be destroyed by snow resting upon them, than when cut flat at the top.' If the method here recommended be properly attended to, Mr. McNab has not the least hesitation in saying, that an excellent hedge of native thorns may be acquired five or six years after planting. At several places he saw the indigenous thorns employed as a fence; at least they had been planted with that intention, and had attained a considerable height, but from want of proper attention, to pruning and weeding, they were so slender that easy access might be obtained between each stem. From such instances of mismanagement, an erroneous opinion seems generally to prevail, that hedges will not succeed in America. 'But,' he very properly remarked, 'if newly planted hedges in Britain were equally neglected, there can be no doubt that they would soon degenerate, and become no better than those which I observed in the United States and Canada.'

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LARGE FRUITED MONTHLY RASPBERRY.—I beg to send you some Raspberry canes cut off near the ground and placed in pots. The variety is, I think, one of the most valuable introductions we have lately been favored with in that class of fruits. It is, I believe of Continental origin, and may be called the "Large Fruited Monthly Raspberry;" it continues to bear from the end of August all through September, October, and if the frost is not very severe (it does not mind a slight frost) till the end of November. The late heavy rains have injured its flavor slightly; before they visited us it was quite equal in flavor, as you will observe it is in size, to Raspberries in July. To ensure a very abundant crop in autumn, all the canes should be cut down in spring close to the ground, but a good autumnal crop may be obtained, as well as a crop in summer, by leaving only one cane, cut in the usual manner, to each root, cutting the others down closely for the autumnal crop. My plants are now covered with fruit in all its stages, and many lateral shoots are just coming into bloom, so that if grown in large pots and placed under glass, Raspberries may be gathered in December.—[The canes submitted for inspection were healthy and fine, and loaded with fruit, which was, however, unfortunately spoiled by travelling.]—*Gard. Chron.*

DOMESTIC NOTICES.

POMOLOGY IN PHILADELPHIA.—Passing a few hours in Philadelphia lately, we made a hasty visit to our correspondent Dr. W. D. BRINCKLE, who is already known to horticulturists as one of the most zealous of amateur cultivators.

Dr. BRINCKLE's *p penchant*, as we were aware, is the production of Seedling varieties of fruit. Hitherto he has been experimenting largely upon the *Strawberry* and *Raspberry*, but he has now turned his attention to the Pear, Apple, and other fruit trees.

His residence is one of the fine houses in Chestnut-st., forming part of the block known as *Girard Square*. Of course, therefore, his gardening operations are mainly confined to the small space comprised in a deep yard of a town house. We confess that when we saw the collection of Seedling fruits assembled there, in various stages of growth, hundreds within that narrow space, and all most systematically arranged—many that had already given surprising results, and a multitude of others that promised well—we found abundant proof how easy it is to bring great results out of small means, and how profitless to the country are thousands of gardens, of the largest size. The limited area before us, only a few hundred square feet, contained a promise of dozens of new varieties of fruit that may be of priceless value hereafter to every one leading a rural life.

Dr. BRINCKLE's plan embraces both *hybridising* and raising accidental varieties from seeds of the finest known sorts. In order not to lose time, and to be able perfectly to control the fertilization of plants under experiment, Dr. B. has been in the habit of having a large number of strawberries, raspberries, etc., in pots. These continue their growth, bloom, are crossed artificially, produce fruit, and the seed is sown, in an apartment in the upper part of his house during the whole winter: thus enabling Dr. B. to carry on his scientific experiments throughout the year. In Raspberries he has been particularly successful. The *Cushing*, already made known to the public, is a variety of merit; but one which has fruited for the first time this season—a fine strong plant, eight feet high, with many side shoots, and which, we understood from a friend who is a capital judge, was quite a pomonal wonder in its way, bids fair to eclipse all his other Seedlings. This is a true *yellow* sort, much larger and finer than the white [misnamed yellow] Antwerp, very productive, and of excellent flavor. Dr. BRINCKLE showed us a faithful drawing of this new Raspberry, which he proposes to call Col. WILDER, after the distinguished President of the Massachusetts Society. We hope to be able to give a drawing and description of this fruit in an early number of this journal. When the various new specimens of trees and plants have been tested, those worthy of preservation are removed to a farm some miles distant from the city. Altogether we left Dr. BRINCKLE, and his singularly rich and singularly limited grounds,

with the feeling that he is doing as much or more in originating new fruits, in a strictly scientific way, than any other person in the country.

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HOVEY'S FRUITS.—Mr. HOVEY, of Boston, is publishing a work on Fruits, with colored plates, of which we took occasion to speak in favorable terms in reviewing it, in our last volume. In our September number a correspondent in Philadelphia, who signed himself "W.," pointed out certain defects in the work in question, and complained of the disappointment which he and others found in the execution of the work. As, on examining the work more critically, we found his criticisms perfectly just, there was no reason why we should withhold his communication.

Mr. HOVEY, in the last number of his Magazine, complains that our correspondent's criticism was dictated by malice! and that, though dated Philadelphia, the *style* of the criticism denotes that it was written by some one who does not live "many miles" from Boston.

We observe that our *ci-devant* friend, Mr. H., makes all the fruits he describes "rich, sugary and delicious," and keeps the "sub-acid" for his editorials. We assure him, very seriously, that our correspondent is not one of his neighbors, but a denizen of the city of brotherly love. And since he will have it that any one, in this country, who complains [as if it was not an editor's duty to stand fire] must be prompted by malice, we must call his attention, against our better feelings, to the following extract from a review of his "*Fruits of America*" [we wonder how he can sleep o' nights when he thinks of that *title!*] by ROBERT THOMPSON, of the London Horticultural Society's Garden, who certainly must be considered as good and as impartial a judge as any in England:

—"The descriptions are very good; the letter press is got up in a superior manner. But we cannot say so much of the plates. The coloring of these is *decidedly bad*. For instance—in the *Beurré d'Aremberg*, the yellow employed is not the proper tint of the fruit; but such as it is, it is also used for tinging the leaves. The fruit of the *Glout Moreeau* has a red, which naturally it does not possess. Judging from the specimen before us, chromolithing will not answer for fruits. False coloring tends to mislead—a plain representation is far preferable.—*Gardener's Chron., London, July 31.*

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ERRATA.—In our last number, in Mr. EATON'S account of the *Wescott* pear, for "*Trescott*" read *Wescott*; for "*Niles' Trescott*" read *Niles' Wescott*.

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ONONDAGA PEAR.—Specimens of this variety, received by us from Syracuse this season, though large and handsome, were by no means equal in flavor to those which we had last year, and we have the same account of specimens sent to Boston. But as we

formed our judgment on a great number of specimens (uniformly fine in flavor) from several localities in Western New-York last season—and as we are assured that the samples produced this year had not their usual high flavor, we still entertain the opinion that the Onondaga will be found a variety of the first class in all respects.

It will be remembered that in some accounts of the history of this handsome pear in our last volume, its origin was apparently traced to Farmington, Conn. A correspondent in Norfolk, Conn., Mr. BATTELLE, has been investigating this matter with considerable care, and thinks it is not the pear now known there, and considered identical by Mr. CASE and others. We will endeavor to publish his remarks in our next.

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GRAY'S BOTANY OF THE NORTHERN STATES.—We had the pleasure of looking over the proof sheets of this work while at the residence of Prof. GRAY, Cambridge, Mass., last month. It will fulfil the most sanguine hopes of his botanical friends. Admirable in arrangement, clear and perspicuous in style, and with the characteristic specific traits italicised so as to enable the student to catch the likeness of a species at a glance, this volume will at once become the indispensable manual of every botanist in the country.

The work was announced to be nearly ready last spring; but Professor GRAY's determination to render it as perfect as possible has, even with month after month of constant labor bestowed on it, delayed it to the present time. In about a month more, however, we learn it will be issued complete from the press.

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CAMELLIAS BY THE THOUSAND.—Philadelphia has long been noted as the focus of the whole Union for exotic culture. There is still no one of our cities where green-house plants are grown in such profusion as here. The house of BUIST stands at the head of exotic commercial gardens, whether for rare and new plants, or for the immense variety which it comprises. MCKENZIE's city range is replete with all the more saleable species of the hardier green-house genera, such as may very properly be called window or house plants; and there are a dozen other commercial establishments around the city, where a great trade is carried on in the more popular exotics.

But we were astonished a short time since, on looking hastily through the premises of Mr. JOHN SHERWOOD, on the Schuylkill side of Philadelphia, to see what a business is made of the growing of the Camellia alone, by this energetic gardener. There are several large green-houses, of the simplest construction, devoted entirely to this plant, and we saw it there in all stages of growth. The largest quantity of good saleable plants, two and three years worked, and well stocked with flower buds, that we have ever seen together, are to be found here, and particularly of the most esteemed standard varieties—the Old Double White (the *ne plus ultra* of the genus) in the greatest quantity, and all the other leading sorts in unusual abundance. Twenty thousand *Camellias*, as we were assured there were in Mr. Sherwood's premises, and mostly ready for sale, is a sight worth looking at in its way.

The large scale on which the culture of this plant is pursued here, enables purchasers to find plants in Philadelphia, at half or a fourth of the prices demanded five years ago; and our readers who are about filling their private conservatories will no doubt be glad to know, where this queen of winter flowers is to be found as "plenty as blackberries."

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THE HYDRAULIC RAM.—Since we drew attention to this ingenious and effective hydraulic machine for raising water, nearly all the agricultural journals have spoken of it at length; at the American Institute, New-York, the Franklin Institute, Philadelphia, and several other fairs, it has been exhibited in full operation; and the public are now somewhat acquainted with its merits.

In a recent visit to several farms and country seats in Chester and Montgomery counties, Pennsylvania, we saw the hydraulic Ram in operation, and in some places where it had been in use for some time. It is considered there an almost indispensable appendage to a good farm or country seat, supplying the house, dairy, outbuildings, etc., with abundance of water at a cost very trifling compared with the benefits received. What struck us most was the insignificant stream of water, and the small fall requisite to work the Ram. A spring the overflow of which will fill an inch and a half pipe, is sufficient to force water to a distance of several hundred feet and a height of fifty or sixty feet. There is scarcely a country place of twenty acres, where a perpetual rivulet or spring of water may not be found sufficiently near the house to afford an abundance of water either for useful or ornamental purposes, with the aid of this very simple little machine, which is of iron, and works in such a way as very seldom to require attention or repairs.

....

HYACINTHS IN GLASSES.—*Dear Sir:* Will you, in your next number of the Horticulturist, inform a subscriber what is best to be done with the bulbs which have been flowering in glasses through the winter. Should the leaves and roots be removed? Should they be placed away in that condition; or what is necessary in order to preserve them in a healthy state, for use another season? A lady, who expends both time and money in the cultivation of both Hyacinths and Narcissus, etc., is invariably disappointed by finding what has been grown in water one year, so wilted and shrunken in the autumn as to be quite useless and spoilt, will be greatly indebted for some information upon the subject. *New-York, Nov. 18, 1847.*

Remarks.—Hyacinths that have bloomed in glasses are so much weakened that they are of little value. By preserving every leaf and root entire, however, and planting the bulbs when the bloom is over, in good soil in the open border, they will generally recover again in two years so as to be fit for blooming again.

If our correspondent wishes to preserve her roots, she must bloom them in pots of good earth instead of water. We may add while on this subject, that the growth of bulbs in glasses, which appear tardy in putting out leaves, will be promoted by filling the glasses with *warm* instead of cold water.—Ed.

POMOLOGICAL NOTES.—*Sir:* Agreeably to your request, last year, I now forward the *Pomme Royale* apple, known with us for an hundred years, judging from the appearance of some of our old trees. It is, without doubt, of French origin, and brought to Rhode-Island, with many other kinds of choice fruit, after the revocation of the edict of Nantes. During the Revolution, a great number of Rhode Island gentlemen removed to Connecticut, and purchased farms, taking with them all the choicest kinds of fruit—among them were a number of my connexions. I have a tree in bearing from Woodstock, under the name of *Pomme Royale*, which is identical with the kind here known by the same name, and this is the apple sent to the Massachusetts Horticultural Society, and by them renamed *Dyer*. One of the specimens sent is from a tree of Dyer's. Within one week from the time Mr. Dyer sent the specimens to Boston, and as a new seedling variety, he found the same apple in my orchard, under the name I now apply to it, but has never corrected the error, as in duty bound.

I also send you specimens of the *White Seek-no-further*—the trees came from Long Island. This is one of the best apples grown, when in perfection, but very unprofitable, is not a good bearer, and with us not one in twenty is perfectly shaped; it keeps not longer than January; the tree has drooping branches, without fruit spurs, very large leaves, and bears its fruit on the extremity of the long naked branches. I have received from Connecticut the *Winter Pomme Royale*, with a description of the tree, and am fully persuaded that it is the same as my *White Seek-no-further*. In the form of the trees, my *White Seek-no-further* and my *Pomme Royale* very much resemble each other.

I shall forward to you other specimens of fruit in their season. I am very respectfully your obedient servant. *Stephen H. Smith. Smithfield, R. I. Sept. 1847.*

We print the foregoing from a letter received some time since from the President of the Rhode-Island Horticultural Society, since it contains some important information relative to two or three New England apples, the names of which have been confounded together, and of which we have had some difficulty in obtaining true accounts. We mean the sorts known as *Pound Royal*, *Pomme Royale* and *Dyer*.

From information and specimens sent us from Connecticut, when we prepared our work on Fruits, we supposed the *Pomme Royale* and *Pound Royal* to be the same fruits, and accordingly gave them as synonyms. But on examining the specimens received from Mr. SMITH, and from half a dozen other sources, this autumn, we perceive that we were in error. The fruit described in our work is the *Pound Royal*, a winter apple—while the *Pomme Royale* is an autumn fruit very distinct, and of great excellence. This error shall be corrected in the next edition of our work, and those having the present edition will please erase *Pomme Royale*, p. 124, and insert *Pound Royal* as the name of the fruit there described.—ED.

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THE MONSTROUS POMPONE CLING.—We have received from JAMES DOUGALL, Esq., Amherst-

burg, Canada West, specimens of that fine old French Cling, the *Parie de Pomponne*, which grows with him in great perfection. They were very large, and of excellent flavor, and more finely colored than the Heath Cling, though ripening about the same season. In the first edition of our work on Fruits, we underrated this magnificent late cling-stone Peach, which we now find in *warm deep soils*, is finer in this country than in France. In the last edition of our work, we have, therefore, corrected our error, and spoken of it as it deserves,

OLD NONSUCH, OR RED CANADA APPLE.—We believe it is not generally known in Western New-York, that the very fine winter apple known as the *Canada Red*, or *Red Canada*, is an old variety, known in New England, and especially around Boston, as the *Old Nonsuch*, for 30 or 40 years past. The apple, as grown at Rochester, is so much improved in size and appearance by the genial soil of western New-York, that it would hardly be recognized by a Massachusetts orchardist, but having our doubts on this subject, last winter we obtained specimens of the *Old Nonsuch* from B. V. FRENCH, Esq. of Boston, and found them identical with the *Red Canada*. After this, Mr. ELLIOT, of Cleveland, sent us the *Old Nonsuch* of Massachusetts grown in his soil, which corresponded precisely in size and color, as well as form and flavor, with the Rochester *Red Canadas*. *Au reste*, we have, the past summer, compared the wood, leaves and growth (quite peculiar) of the *Red Canada* with those of the *Old Nonsuch*, (which latter we have growing under our eye from five different sources,) and find the two sorts entirely identical.

It is singular that the history of this "Old Nonsuch" is involved in so much obscurity. It is not known whether it is a native or foreign apple—though it is certain it is not the *Nonsuch* of present English authors. We have it by this name from the Flushing nursery of BLOODGOOD, twenty years ago, and it is very well known in all the old orchards of Massachusetts. In New-England, it is rated as an apple of first quality—though rather an indifferent bearer; but in Western New-York, it is not only large and very high-colored, but quite productive—altogether an apple of the first class.

A CHARMING FALL FLOWER.—One of the prettiest things to be found in the flower-garden in October and November, is the charming little *Sedum sieboldii*, lately introduced from Japan. It forms the most symmetrical tuft of pale silvery foliage and lovely pink blossoms imaginable in the autumn—a well established plant bearing fifty or sixty rounded corymbs of flowers. Although a tender looking plant, it is one of the hardiest of all the herbaceous division, and blooms almost into December, in spite of the most severe frosts. We observed it lately, in several green-houses about New-York, grown in pots, and kept under glass in winter, a care which it does not at all require, for Japan is, in climate, so nearly like our own, that a large portion of its vegetation is perfectly hardy here.

This *Sedum*, like the rest of the genus, is very easily propagated; any bit of the stem taking root as a cutting; and it would make a pretty edging to walks in the flower garden.

TREATMENT OF "HOUSE PLANTS."—A "city correspondent" asks "a few hints regarding the treatment of green-house plants, when kept in parlors, especially where anthracite coal fires are kept."

We answer as follows :

1. If possible have the pots *well drained*, and this is best effected, when the plants are shifted, by filling the pot *one-fifth* deep with bits of charcoal.

2d. Never water a plant while the soil appears wet. If the roots cannot take up the moisture as it is given daily, you must give less, or your plants will suffer. Water abundantly when the plants are in a growing state—very sparingly when vegetation is dormant.

3d. In rooms heated by anthracite the pores of the leaves get stopped with fine dust. It is a great promoter of health and luxuriance to cleanse the foliage thoroughly once a week by syringing it with tepid water. While doing this turn the pot on its side, so that the earth may not receive too much water.

4th. Give as much light as possible. A rather low temperature, if uniform, is better than one too high, since it gives healthier foliage, and stronger flowers.

A HORTICULTURAL SOCIETY'S GARDEN IN AMERICA.—We learn, by a letter from A. H. ERNST, Esq., of Cincinnati, that negotiations are on foot between the Cincinnati Horticultural Society and Mr. HOFFNER of that place, for the transfer to the society, on very liberal terms, of the fine country residence of Mr. H., to be used as a public horticultural and experimental garden by the Society. The place is about four miles from the city, comprises fifteen acres of ground capably stocked with a great number of trees and plants, with good buildings, a green-house, etc., upon the premises. Mr. HOFFNER has, for a considerable time, been a most industrious amateur collector, and his place, therefore, is already a fine nucleus upon which to form such a garden as the Society ought to establish.

This is very agreeable intelligence. Not one of our horticultural societies has a garden, though the value of such an establishment, if it were properly managed and supported, would be very great. But in no part of the country would this advantage be so great as at Cincinnati—for that city, being the gardening centre of the whole Mississippi and Ohio Valleys—a country still full of undeveloped resources and destined to become amazingly productive in its gardens and orchards—a public experimental garden would at once be the place for investigating all doubtful points, testing foreign and native fruits, and disseminating these products, and that knowledge which can only be acquired by experience, through the whole of the west.

We sincerely hope, therefore, that the Society may be able to achieve this desideratum, and commence with a carefully systematized plan of operations.

PEAR-TREE BLIGHT.—We have suffered but little from the fire-blight in the pear tree this summer. Observation of the character of the two past seasons has confirmed me in the opinion that

the sun has more to do with producing this disease than either *winter* or *insects*. Hence I am a believer in the benefit of your recommendation of *whitewash* to throw off the rays of the sun. Respectfully. A. H. Ernst. Cincinnati. Nov. 5, 1847.

[The whitewash should be put on at this season; it should be applied warm, with a little glue or sizing, (say a gill to a pailful) mixed with it, to prevent its being washed off by the rain.—Ed.]

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OBITUARY.—THE LATE MR. SHAW.—We have received the following obituary notice of the late Mr. SHAW, from a friend in New-York, who knew him long and well, which deserves a place in our columns. Mr. SHAW was one of the pioneer horticulturists in New-York, and was well known for his zeal and industry in the cause, by all its devotees there. His first garden, at the corner of Prince and McDougall streets, (referred to below,) was, fifteen or twenty years ago, perhaps, the most perfect specimen of *practical skill* in the art in America. We well remember the magnificent apricots, gooseberries and carnations, which we saw there, at that time, and which we have never since seen surpassed.

Mr. SHAW imported many rare and valuable varieties of fruit, and disseminated them at a time when there were very few persons in this country, comparatively, who maintained a correspondence for this purpose with European cultivators. The oldest tree of the *Holland Bigarreau*, one of the largest and most beautiful of cherries in the country, which is now growing in our neighborhood, was introduced from France by this horticulturist.—Ed.

WILLIAM SHAW, Esq., who recently died at Astoria, L. I., at the advanced age of 77, was, for a number of years, one of our most active and efficient horticulturists. He came over from Ireland in early life, and was for many years an importing merchant in New-York: having experienced reverses in business, he compromised, had a liberal discharge, resumed again, and by industry and the smiles of Providence, was so far successful as to liquidate the remaining claims—conduct as honorable as praiseworthy.

On retiring from the pursuits of commerce, he devoted the last thirty years of his life to the delightful pursuits of Horticulture. Doubtless many of your readers well remember his beautiful garden of fruits and flowers at the corner of McDougall and Prince-streets. Mr. SHAW was one of the earliest and most zealous cultivators of the *Isabella Grape*. The writer can testify to their great size and beauty on his ample and well stocked trellises, and to the uniform kindness and attention every one received, whom the reputation of his well kept grounds, occupying nearly an entire square in the (then) suburban part of the city, led to visit them. There he also successfully cultivated many of the best foreign grapes in the open air, and the nectarine, apricot and peach also, in a manner rarely equalled in America. His espalier apricots and nectarines were in their season a surprising show of luscious beauty. The advance of the city upward, compelled him to leave his pleasant location, and retreat to the neighborhood of Astoria, near by to

Hurlgate, selecting with his usual good taste some five acres on a tabled eminence, overlooking that "tremendous whirlpool, the Pot." There, in a short time, a little paradise sprung up under his hands—a neat Grecian villa, hedged with the Chinese Arbor Vitæ, the ornamental grounds adorned with the Weeping Larch, Hemlock, Spruce and a great variety of rare ornamental trees and shrubs.

The *Abies* were his favorites; in their culture he excelled, and his success had its influence in decorating with this fine family of evergreens this part of Long Island for many miles round. Mr. SHAW's garden was always a kind of museum both arboricultural and pomological—and many clever lessons in gardening have been silently taught by his successful and tasteful example there.

Mr. SHAW was a profound lover of the country, and one of his especial injunctions to his family was to inter him in a pleasant spot he had himself selected in the village churchyard, hard by his residence. He did not like the thought, of lying, even after death, in the family vault in town; but like the delicate minded WILSON, the ornithologist, he wished "to be buried where the birds would sing, and the spring flowers bloom over his grave"—which request was scrupulously carried into effect at 3 P. M., Oct. 31, 1847. Yours truly. *A Subscriber.* New-York, Nov. 10, 1847.

THE "IDA" GREEN GAGE.—*Dear Sir:* I have just received the October number of the Horticulturist, and the remarks on the "Ida Green Gage" Plum by Mr. REAGLES caught my attention. It is no seedling of this country; it is nothing more than the true Green Gage itself. The location on which this Plum grows, is favorable to the development of the fine qualities of this best of all plums. I say best of all plums, as I question if any of the plums equal it in richness.

This plum, as I have learned, was imported from France by CHANCELLOR LIVINGSTON, and was obtained from his place—this is the history of it, by the late JUDGE BUEL.

I would advise young beginners in growing fruit, to be a little more careful about christening every good plum that they may happen to find, as a new seedling; and also to take the old Scotchman's advice to his son, "Jock, if you would only hold your tongue, folks might think you were a pretty clever fellow."

I have propagated and sold the above plum for ten years past, as the true *Green Gage* or *Reine Claude*, and in all my intercourse with A. P. HEARTT, Esq., the late proprietor of the garden on Ida Hill, where the trees grow, (as there are a number of them,) I never heard him even suggest that it was a seedling. Yours respectfully. *Jas. Wilson.* Albany, Oct. 5, 1847.

[When the fruit was sent to us, we thought it most probably a Green Gage, though we knew that several persons in Troy, familiar with fruit, considered it distinct. Still we remarked, in describing it that it was at all events, nothing more than a *sub-variety* of the Green Gage. What Mr. WILSON says, fortified by the opinions of others familiar with the growth of the tree, leaves no doubt that

this variety is only the old Green Gage modified by culture in a very favorable soil.—Ed.]

RAWLE'S JANNETT APPLE.—In the last number of the Horticulturist, Mr. C. SPRINGER, after remarking that the Genneting deserves a place in your work on fruits, leaves it to you to give it a name, he indirectly preferring the name of *Rockremain* to *Jannett*, as the latter name is applied to several fruits.

There are some two or three apples slightly resembling each other, which are called Gennets. There is, however, but one fruit generally known to cultivators as the *Rawle's Jannett*. It is perhaps the best winter apple in the west—the Newton Pippin not excepted. I am confident that I have heard its name mentioned thousands of times, and I never before heard that of *Rockremain* offered; and to substitute that for *Rawle's Jannett* would be a little like turning upside down all the best orchards of the west, especially those of Kentucky. What great and good apple is there, whose name has not been borrowed by two or three aspiring inferiors?

The desideratum of the day is to correct the great confusion existing in pomology, and this certainly is not effected by changing names, for you will not and cannot bury an old name universally received, by bringing forth a new one. To western readers, an author would only be likely to make himself ridiculous, by attempting to change the name of a fruit with which there has been an universal favorite *under one name* for so many years. I would suggest that it retain the name under which it was described by Mr. BYRAM. Yours respectfully. *Geo. H. Yeamar.* Mason County, Kentucky, Sept. 12, 1847.

[It should be the aim of every pomological writer, in describing and publishing for the first time a fruit which is extensively known in certain parts of the country, to adopt the title, if there are several, by which it is most generally known, provided there is no positive impropriety in so doing. Mr. SPRINGER was not, we presume, aware of the universality of the name "*Rawle's Jannett*" at the west, and since it was first described and published by Mr. BYRAM under that title, it should retain it. Fortunately the "Rules of Pomology," now adopted by the leading Horticultural Societies, will hereafter settle and govern all these points.—Ed.]

HORTICULTURE AT BUFFALO.—We have had a fine display at our horticultural fair this season. Our tables have been laden with Pomona's richest treasures. Grapes, peaches, apples, pears, apricots, plums, quinces, &c. have vied with each other in the attractions of size, bloom and color. The season has been one of fruitfulness, the blossoms set well, and many trees which are usually shy bearers have proved productive. The curculio has been less destructive, its habits are becoming better known, and salutary measures adopted to render it ineffectual in its depredations. As a whole the plum crop has been an abundant one. The enterprise that has been manifest during the existence of our society, in procuring all new as well as the old choice varieties of fruit, is now beginning to be

visible, by the display of the fruit itself; and however commendable the enterprise is, we would not base our encomiums so much upon the quantity as upon the quality of specimens. The anxious desire to possess every thing that is new in the shape of fruit trees, because they are so, is not legitimately the great object to be sought for in the results of our horticultural labors, but rather a judicious and proper selection of those which have been tested in their various qualities and found adapted to our localities. And again, we all know there are many fruits that possess an excellence in one locality that is lost by removal to another; and as friend D. THOMAS pithily observes, "three degrees of latitude may produce more than three degrees of flavor." Amongst the apples were the Northern Spy, Swaar, St. Lawrence, Roxbury Russet, Detroit Red, Cashear, Seek-no-further, Rhode-Island Greening, &c.; and of pears, the Seckel, Glout Morceau, Stevens' Genesee, Summer Virgalieu, White Doyenne, Onondaga, Beurre d'Arenburg, Maria Louisa, Duchess D'Angouleme and Bartlett. These are standard sorts for this locality; truly fine in all respects, and sure bearers. Of peaches we fail, as compared with the New-Jersey growers; our soils are not warm enough, and our late frosts endanger a sureness of crop; yet, notwithstanding, we have many fine peaches. Crawford's Melacoton, both early and late, Red Cheek Melacoton, Red Rare-ripe, George the Fourth, are, perhaps, among the choicest of those that flourish with us. In grape culture much is also doing. All the hardier kinds are pretty generally cultivated; and several varieties are in the course of building, for the culture of the more rich, but more tender foreign varieties, which, in a season or two, will render us entirely independent of foreign importation. The quince culture has undergone a radical change; the error that predominated, in giving the quince shady and out of the way places, under the fence, &c., with poorness of soil, is now well nigh exploded. The noble specimens that have been exhibited by our enterprising amateur, L. EATON, Esq., measuring 15 inches in circumference, are the result of strong feeding, open position, and well tilled borders. The serapings of the poultry-house have increased his stock nearly fifty per cent in size. These results of the progress of our infant society are truly gratifying to us, as evidencing a rapidly discriminating taste and skill in horticulture, creditable to our citizens generally, and may be taken as an earnest of our future efforts in this delightful pursuit. I hope you will allow me to say, that it is to the excellent horticultural and agricultural works of our country, (and first among these I must number the Horticulturist, Fruit and Fruit Trees, &c., Cottage Residences, &c.) that we owe much of the impulse towards rural improvement now evinced here. An intelligent friend from New-York, whom I drove through and about the city lately, remarked, "Downing seems to be well known to you all here. Your cottage designs—your mode of painting—your gardening, all bespeak a familiarity with his works." And there are many here not personally known to you, who, nevertheless, almost claim you as a friend, and delight to converse with you through the columns of the Horticulturist. Great interest

is manifest in the agricultural and horticultural societies of our own and the adjacent counties, in urging the claims of this city to be the place of holding the State Agricultural Fair for 1848. Numerous resolutions have been adopted, and committees appointed to farther this object, which we trust will be favorably received by our eastern friends. Very truly your ob't. *W. R. Coppock. Buffalo, Oct. 10, 1847.*

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STRAWBERRIES.—I noticed an article signed by "A Subscriber," and dated "Nashville," in your last number. I greatly regret that friend LONGWORTH, so noted for his open manliness, should have attacked me from a masked battery. Being oppressed with the execution of a mass of nursery orders, besides the extensive correspondence of the present period, I can not at this time do justice to Mr. LONGWORTH or myself in any responsive comments; but sir, I design to take up the "Strawberry Question" once more in December, and to combine very many important items, that I think I shall finish the subject; and although I am desirous at all times, from feelings of personal respect, to shun collision with the "Hercules" of Cincinnati on any subject, I shall not refrain, when discussing this matter, to point out several errors into which he has inadvertently fallen, including those of his last communication, now referred to. Yours very resp. *Wm. R. Prince. Flushing, Nov. 12, 1847.*

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THE RULES OF POMOLOGY.—*Dear Sir:* I am happy to be able to inform you, that at a regular meeting of our Society last evening, the report of the Fruit Committee, embodying a series of rules to fix the nomenclature of fruits, was, after considerable discussion, adopted by the Society in a body, with great unanimity and much enthusiasm. I enclose the printed report of the committee. Yours. *A Member of the Horticultural Society. Philadelphia, Nov. 17, 1847.*

[We reprint this report, as though the rules are essentially the same as passed at Boston and Cincinnati, there is a slight difference in the phraseology.]

Report of the Committee of the Pennsylvania Horticultural Society for establishing the names of Fruits.

The Committee for establishing the names of Fruit, beg leave to report:

That, in the discharge of the duties of their appointment, during the past year, they trust they have been in some measure, instrumental in diffusing a more correct knowledge of the true names of the various specimens of fruit, which have been exhibited at the meetings of the Society. They have had, however, difficulties to contend with, chiefly growing out of the confusion which exists in pomological nomenclature. Several names, not unfrequently, have been given to the same fruit, and at times the Committee has been at a loss to determine which should have the pre-eminence. That all embarrassment, in regard to this matter, may be avoided, some standard authority, for the names of fruit, should be recognized by the Society. It is also important that a uniform set of rules should be adopted by the leading Horticultural Societies, for naming new

varieties which may hereafter be formed. This becomes the more necessary, as the attention of Pomologists is, at this time, particularly directed to the formation of new kinds. In order that the exigencies both of the past and future may be met, believing, as we do, that the action of this Society will receive a cordial response from the prominent Horticultural Societies of the country, the Committee, after due deliberation, recommend the adoption of the accompanying Pomological Rules.

The Rules of American Pomology.

1. No new seedling fruit shall hereafter be entitled to a name, or to pomological recommendation, which is not equal to any similar varieties of the first rank already known; or which, if only of second rate flavor, is so decidedly superior in vigor, hardness or productiveness, to varieties of the same character already known, as to render it well worthy of cultivation.

2. The originator, first grower, or he who first makes known a new native variety of merit, shall be entitled to suggest a name for such variety; which name, if a suitable one, (i. e. coming within the rules of nomenclature,) shall be adopted by the writer describing the fruit for the first time. But if the name proposed is inappropriate, or does not come within the rules, then the describer shall be at liberty to give a name.

3. No new native fruit shall be considered as named, until the same has been accurately described, in pomological terms, by some competent person, conversant with existing varieties, some pomologist of reputation, or the fruit committee of some established Horticultural Society.

4. The description shall embrace the following particulars: The size, form, color, flavor, and time of ripening of the fruit; the texture and color of the flesh; with the addition, in stone fruits, of the size of the stone, adherence or non-adherence of the flesh, form of the suture, and the hollow of the stem; and in kernel-fruits, a description of the core and seeds; the size, position, and insertion of the stalk, and form of the eye; in peaches, the form of the leaf-glands, and size of the blossoms; in grapes, the form of the bunches; and in strawberries, the character of the blossoms, whether staminate or pistillate. And where there is any marked character in the foliage, growth of the young wood, or bearing tree, or any peculiar characteristic feature whatever, the same shall be given.

5. The name of the new variety shall not be con-

sidered as established, until the description shall have been published in at least one Horticultural or Agricultural Journal, or Pomological work, of large circulation, and acknowledged character.

6. In giving names to newly originated varieties, all harsh, vulgar, or inelegant names shall be avoided—such as "Sheep-rose," "Hog-pen," &c.

7. No new names shall be given, which consist of more than two words, excepting only where the originator's name is added. Thus all unnecessarily long titles will be avoided, such as "New large black Bigarreau," "Beurré gris d'Hiver Nouveau."

8. Characteristic names, or those in some way descriptive of the qualities, origin, or habit of the fruit or tree shall be preferred. They may be in reference to intrinsic properties, as "Golden Sweeting," "Sans Pepins;" to local origin, as "Newtown Pippin," "Hudson Gage;" to the season of ripening, as "Early Scarlet," "Frost Gage;" to the form and color, as "Verte Longue," "Blue Pearmain;" or commemorative of a particular era, place, or person, as "Tippecanoe," "La Grange," "Baldwin."

9. All superfluous terms shall be avoided: thus, instead of "Thompson's Seedling Beurré," it is better to say "Thompson's Beurré," or simply "Thompson."

10. Before giving a name to a new fruit, its qualities should be decided by at least two season's experience.

11. When two persons have named or described a new native fruit, then the name and description first published, if according to the rules herein indicated, shall have the priority.

12. No person introducing new fruits from abroad, shall be allowed to re-christen them, or give them his own name.

13. In deciding the names of fruits already known and described, until otherwise agreed upon, the latest edition of the "Catalogue of the London Horticultural Society," shall be considered the Standard European authority; and Downing's "Fruit and Fruit Trees of America," the Standard American authority.

.....
ERRATA.—In the present number, p. 274, *Rules of American Pomology*, Art. IV. for "The form, exterior colour," etc., read "The size, form, and exterior colour, the texture and colour of the flesh, and the flavor and time of ripening of the fruit," etc.

MASSACHUSETTS HORTICULTURAL SOCIETY.

NINETEENTH ANNUAL EXHIBITION.

.....
This exhibition took place at the Society's Hall, School-st., on Wednesday, Thursday, and Friday, Sept. 22d, 23d, and 24th, 1847. The Committee of Arrangements entrusted with its management, respectfully submit their Report. The Exhibition, as a whole, was a very good one, but different in its general features from all former ones. There was a deficiency of plants in pots, from the Green House and Conservatory, which always adds to displays of this kind, and to its general beauty and characteristic effect. Whether this is owing to a want of encouragement in the way of premiums,

or other causes, is not known. The Committee hope for an improvement in this department at future anniversaries. The Dahlias and Asters were excellent, and the former quite numerous in new varieties and in the perfection of their blooms. The other cut flowers and small bouquets were not as abundant as at many of the weekly exhibitions. The large bouquets for the Marble and Bradlee Vases by Messrs. Hovey & Co., Nugent and Warren, were very showy, and well made with fine flowers and evergreens. The large moss and flower designs by Mr. Quant, Mr. Thomas, Mr. Walker, and a floral bower by Mr. McNeil, with a fountain and gold fish, were chaste and pretty. The wreaths by Messrs. Quant, Walker, and Bowditch, were beautiful and well made. The

flower baskets by Miss Russell, and the designs composed of our beautiful native grasses, by Miss Bowker and Mrs. Sparrell, and a moss vase ornamented with the acorn and snow-drop, by "Fanny Forrester," were chaste, and attracted much attention. The variety of vegetables was not numerous, but nearly all the specimens were good. Mr. Cole presented thirty distinct varieties of potatoes, fifteen of which were seedlings, which entitle that gentleman to a particular notice in the vegetable report. The display of fruits was decidedly the best and most abundant in specimens ever made by the Society. The apples were fair, of good size, well colored, and fine in flavor. The variety of Peaches and Quinces was small, and all but one or two of the samples quite ordinary. There were some excellent specimens of plums. In grapes the varieties were more numerous, and the quality more delicious and better matured than on any former occasion.

Mr. Needham was the successful competitor; his Canon Hall Muscats were larger in bunch and berry, than any ever before shown. Mr. Allen had the largest number of specimens, all of which were fine. The Wilmot's Black Hamburgh, by Messrs. Hovey, were extra fine and well ripened, and the collections of Messrs. Young, Donald, and Towne, were very good.

The great feature of the exhibition was the array of pears, which was undoubtedly the most valuable ever made in this country. The majority of the specimens were rather above their average in size, fair, highly colored, well marked in feature, and of good quality. About fifty new varieties of pears have been fruited for the first time in this country, and it is believed that many of them will prove to be valuable acquisitions, and will hereafter take rank in classes numbers one and two. The new varieties were mostly in the large collections of Col. Wilder, Mr. Manning, and Hovey & Co. The contributions of fruits particularly worthy of special reference, were those from the Pomological Gardens of Mr. Manning, Salem, who had two hundred and fifty-five varieties of pears; Col. Wilder, one hundred and sixty; Hovey & Co., seventy, more than half of which were new; J. Lovett 2d, about eighty; Samuel Walker, sixty; Otis Johnson, Lynn, sixty; Winslips, Brighton, forty; Mr. Allen, Salem, grapes, pears, peaches, and figs; Mr. Warren, Brighton, grapes, apples, and pears; J. Stickney, peaches, pears, and apples; B. V. French, Braintree, sixty-six varieties of apples; Cheever Newhall, pears; E. M. Richards, Dedham, apples; F. W. Macondray, pears; S. Pond, extra fine Williams' Bon Chretien pears; E. Wight, Dedham, apples; J. M. Ives, Salem, pears; R. Crooker, Roxbury, in particular, extra fine Van Mons Leon le Clerc pears; Horace Gray, by J. Donald, a collection of well grown grapes; H. Vandine, pears, and extra fine Coe's Golden Drop Plum; J. Owen, Cambridge, peaches and apples; J. French, pears; N. Stetson, Bridgewater, fine seedling peaches, and extra fine Crawford's late; Pennsylvania Horticultural Society, pears and apples; W. Stearns, Salem, pears; A. D. Williams & Sons, pears and apples. A remark was made that our nurserymen and amateurs were bestowing too much time and money on the cultivation of the pear to the neglect of the apple. Whether this be true or otherwise, the Committee must leave for the future to decide.

There were four large baskets of rich assorted fruits worthy of particular mention: One from Otis Johnson, containing grapes, peaches, pears, nectarines, plums, apples, &c.; one from Col. T. H. Perkins, by Wm. Quant, with grapes, peaches, and pears; one from A. Bowditch, with grapes in variety; and another from Capt. Macondray, with grapes, peaches, pears, and apples. These were prominent objects upon the centre tables, and elicited much attention from the beautiful arrangements of the various specimens.

The Society was honored by the attendance of Delegates from the Pennsylvania Horticultural Society, Philadelphia;

American Institute, New-York; New-York State Agricultural Society; Worcester Hort. Society; New Haven county Hort. Society; Rhode Island Hort. Society; Long Island Hort. Society; Pomological Society, New Haven; Albany and Rensselaer Horticultural Society, and a volunteer delegate from our own Berkshire. These several delegates were duly honored and cared for by the Vice Presidents of the Society. This anniversary has been particularly profitable, as well in the interchange of civilities, as in imparting and receiving much information on subjects of horticulture and pomology; and in the severe tests which many varieties of fruits have been put to before large and intelligent boards of scientific men. Our numerous meetings were thus made instructive as well as pleasant and agreeable in friendly reciprocities.

The weather during the exhibition was favorable, and the hall filled most of the time to its utmost capacity of accommodation, by delighted audiences. It has now been proved to a demonstration, that the hall is not of competent size to contain near all the specimens offered for exhibition; and the Committee owe an apology to several for whom space could not be made for their valuable collections, and which remained unpacked, and were not shown. The Committee name this at the present time in the hope that measures will be taken, at an early day, to secure Faneuil Hall, or some other large building, for the exhibition of 1848.

The Committee trust that the awards of the judges will be satisfactory, and that the premiums have been bestowed upon those justly entitled to receive them.

For the Committee, HENRY W. DUTTON, Chairman.

ANNUAL MEETING OF THE SOCIETY.

THE annual meeting of the Mass. Hort. Society, was held at its Hall, on the 2d of October, when the following gentlemen were elected officers of the Society for the year 1848:

President—Marshall P. Wilder.

Vice-Presidents—B. V. French, Cheever Newhall, E. M. Richards, J. S. Cabot.

Treasurer—Samuel Walker.

Corresponding Secretary—J. E. Teschemacher.

Recording Secretary—E. C. R. Walker.

Professor of Botany and Vegetable Physiology—John Lewis Russell, A. M.

Professor of Entomology—T. W. Harris, M. D.

Professor of Horticultural Chemistry—E. N. Horsford.

Committee on Fruits—Samuel Walker, Chairman; P. B. Hovey, Jr., Otis Johnson, David Haggerston, J. S. Cabot, Eben Wight, F. W. Macondray.

Committee on Plants and Flowers—Joseph Breck, Chairman; H. W. Dutton, W. E. Carter, Alex. McLellan, F. A. Story, William Quant, William B. Richards.

Committee on Vegetables—A. D. Williams, Jr., Chairman; W. B. Kingsbury, A. D. Williams, Josiah Newhall, James Nugent, Azell Bowditch, E. C. R. Walker.

Committee on the Library—C. K. Dillaway, Chairman; R. M. Copeland, Joseph Breck, W. B. Richards.

Committee on Synonyms of Fruit—M. P. Wilder, Chairman; B. V. French, C. M. Hovey, J. S. Cabot, the Chairman of the Fruit Committee.

Executive Committee—The President, Chairman; the Treasurer, A. Aspinwall, E. M. Richards, Otis Johnson.

Committee for Establishing Premiums—The Chairman of the Committee on Fruits, Chairman; the Chairman of the Committee on Flowers, the Chairman of the Committee on Vegetables, C. M. Hovey, David Haggerston.

Finance Committee—Josiah Stickney, Chairman, Joseph Balch, F. W. Macondray.

Committee of Publication—J. E. Teschemacher, Chairman; C. K. Dillaway, Eben Wight, Recording Secretary, Chairman of the Committee on Fruits, the Chairman of the Committee on Flowers, the Chairman of the Committee on Vegetables.

PENNSYLVANIA HORTICULTURAL SOCIETY.

REPORTS OF THE COMMITTEES AT THE
NINETEENTH EXHIBITION, *Held 15th, 16th, and 17th September, 1847.*

The Committee for awarding Premiums on Grapes, report the following, viz :

GRAPES—native.—For the best Isabella, six bunches, to David Ferguson—2d, to Susan J. Smith—3d, to H. F. Felix & Co., Reading, Pa.

For the best Catawba, six bunches, to Samuel Smith—2d, to Henry N. Johnson—3d, to Wm. Johns.

For the best Elsinborough, six bunches, to T. Hilliard—2d, to J. B. Smith—3d, to L. Craft—best of another variety of Ohio Grape, to R. Buist.

Foreign, under glass.—For the best named collection, to Wm. Sinton, gardener to George W. Carpenter—2d, to R. S. Field, Princeton, N. J.

For the best Hamburg, four bunches, to Jno. Dougherty—2d, to D. Ferguson.

For the best Frankenthal, four bunches, to Wm. Sinton, gardener to Geo. W. Carpenter.

For the best Chasselas, four bunches, to T. Hilliard.

For the best White Muscat, of Alexandria, four bunches, to D. Ferguson—2d, to Stewart & Bales.

For the best White Frontignac, four bunches, to R. S. Field, Princeton, N. J.

For the best of another variety, White Syrian, to William Westcott—2d, to Joshua Longstreth.

Foreign, in the open air.—For the best named collection to Edwin Middleton—2d, to Isaac B. Baxter—3d, to J. Comfort.

For the best of black variety, Black Hamburg, to Peter Shuster—2d, to S. J. Henderson—3d, Frankenthal, to J. B. Smith.

For the best of a white variety, White Frontignac, to P. Kane, gardener to R. Price—2d. Golden Chasselas, to A. C. Hye—3d, Sweet Water, to D. O. Tatum.

All of which are respectfully submitted. E. W. KEYSER, P. K. GORGAS, FRANKLIN PEALE, Committee

The Committee on Stone Fruits, respectfully report that they have awarded premiums as follows, viz :

PEACHES.—For the best, one bushel, of Heath, to J. O. Grover—2d, Seedling, free, to J. F. Scott—3d, Oldmixon, to Isaac B. Baxter.

For the best one peck, Crawford's late Melecotone, to Chas. Van Sciver—2d, Seedling, Yellow Free, to J. G. Hoffman—3d, Rodman Cling, to Mr. Reeves.

For the best two doz. Crawford's late Melecotone; to Allen Jones—2d, Yellow Free, to J. Tyson.

NECTARINES.—For the best one dozen, Yellow, to John Sherwood—2d, Elruge, to Dr. W. D. Hartman.

PLUMS.—For the best two dozen, to John Anspach—2d, to Thos. Maghran, gardener to S. R. Simmons—3d, Yellow Magnum Bonum, to T. L. Bonsall.

And special premiums of one dollar each, for Peaches, to J. D. Burling, J. Hunter Sterling, W. Johns, Mrs. Physick, James Harrison, and Samuel Caley.

Respectfully submitted. THOMAS M'EEVEN, CHAS. P. HAYES, J. H. BRADFORD, Committee.

The Committee on Pears and Melons, respectfully report that they have awarded the following premiums :

PEARS.—For the best and most numerous named varieties, to J. Rutter, West Chester—2d, to J. B. Smith—3d, to Thos. Hancock—4th, to Sam'l R. Simmous.

For the best Seckel, half peck, to John B. Smith—2d, to William Graham—3d, to E. B. Grubb.

For the best Doyenne blanc, or butter, one peck, to John B. Smith—2d, to C. Stephen Smith—3d, to D. Landreth & Fulton.

For the best of another variety, half a dozen, to Isaac B. Baxter—2d, to R. Buist.

For the best half peck of a different variety, to John B. Smith—2d, to Col. R. Carr.

For a fine collection of Pears, a special premium of \$1 to S. Maupay—do, to Jacob Snider—do, to Lemuel Brackett—do, to Jonathan Tyson.

MELONS.—For the best, three in number, to Woodburn Mulford, Salem co., N. J.—2d, to E. B. Grubb.

For fine Melons, a special premium of \$1 to Patrick Gallagher, gardener to Miss Gratz.

WATER MELONS.—For the best Spanish, three in number, to Wm. Brown—2d, to Patrick Gallagher—3d, to Thos. Hancock.

For best of another variety, to Joseph C. Zane—2d, to George B. Roussler—3d, to Isaiah Toy.

For fine Water Melons, a special premium of \$1 to Thos. Hancock—do, to E. Starr.

By joint action of the Fruit Committees, a special premium of \$5 was awarded to Messrs. Flack, Thompson & Brother, proprietors of Kephart's Fruit Preserver. By means of this invaluable invention, specimens of 24 varieties of Pears, Apples, Peaches, and other kinds of Fruits, which could not otherwise have been exhibited, were placed on the tables. Among these varieties were Apples of 1846—the Moyamensing Pear, the Washington, Pennsylvania, Petre, Chapman, Lodge, and Leech's Kingessing; the last being a new Seedling Pear of great merit.

A most beautiful and highly interesting collection of Pears and Apples, (embracing 29 varieties.) was presented by the delegation from the Massachusetts Horticultural Society, to a member of the Committee, by whom they were deposited in the Hall of Exhibition. These specimens were fine, and of the choicest and rarest kinds. And the Committee most cordially tender the thanks of the Society to the gentlemen from Boston, for their valuable contribution.

WM. D. BRINCKLE, GEO. ZANTZINGER, JAMES BISSET, Committee.

The Committee for awarding premiums on Apples and Quinces, beg leave most respectfully to report that they have awarded the following :

APPLES.—For the best and most numerous named varieties, to Geo. B. Deacon, Burlington, N. J.—2d, to John Perkins, Moorestown, N. J.

For the best one bushel, to Benj. Stiles—2d, to John Perkins—3d, to John Perkins.

For the best one peck, to George B. Howard—2d, to John Perkins.

QUINCES.—For the best half peck, to James Harrison—2d, to Thomas Newbold—3d, to Dr. Geo. Uhler.

Also, a special premium of \$2 to Dr. R. T. Underhill, of Croton Point, New-York, for the finest Quinces exhibited, having been entered too late for competition.

PETER MACKENSIE, WM. S. VAUX, GEO. B. DEACON, Committee.

The Committee on Vegetables beg leave to report the following list of premiums awarded at the Nineteenth Exhibition :

POTATOES.—For the best, one bushel, to Patrick Gallagher, gardener to Miss Gratz—2d, to Anthony Felten—3d, to Patrick McDonald, Miss Gratz's farmer—4th, to Isaac Stiles—5th, to Samuel Cooper.

For the best Seedling to John Perkins, gardener to C. J. Duval.

For the best Sweet, one bushel, to Ralph Hunt—2d, to Wm. Brown.

BEETS.—For the best, one dozen, to Patrick Gallagher—2d, to Samuel Cooper.

CARROTS.—For the best, two dozen, to David Smith—2d, to J. J. Jennings.

SALADY.—For the best two dozen, to David Smith—2d, to Thos. Hancock.

ONIONS.—For the best four dozen to John Austin, gardener to I. B. Baxter—2d, to Anthony Felten.

CABBAGE.—For the best six heads, to Jno. Riley, gardener to the Insane Hospital—2d, to Anthony Felten—3d, to Jacob Engleman.

For the best Red Dutch, to Jacob Engleman—2d, to J. J. Jennings.

LETTUCE.—For the best, to Jacob Engleman—2d, to A. Felten.

ENDIVE.—For the best blanched plants, to John Austin—2d, to J. J. Jennings.

CHARD.—For the best six plants, to Patrick Gallagher—2d, to A. Patton, Mrs. Kohne's gardener.

CARION.—For the best blanched, six heads, to A. Felten—2d, to Samuel Cooper.

CELERY—For the best blanched, six heads, to Samuel Cooper—2d, to B. Daniels, gardener to C. Cope.

CELLERIAC.—For the best six plants, to Dr. E. J. Rivinus, W. Chester.

EGG PLANTS—For the best, six fruit, to George Luzenby—2d, to Samuel Cooper—3d, to Robert Henery, gardener to G. Blight.

TOMATOES.—For the best, one peck, to Jacob Engleman—2d, to Patrick Gallagher—3d, to J. Jones, gardener to George J. Leiper.

INDIAN CORN (for table use).—For the best, three dozen, to A. Felten—2d, to John Perkins.

PUMPKINS.—For the best, two largest, to Thomas Field—2d, to Samuel Cooper.

PEAS (green).—For the best and largest quantity, to T. Hancock—2d, to Robt. Kilvington.

VEGETABLES.—For the best display to Anthony Felten—2d, to Saml. Cooper—3d, to Jno. Austin, I. B. Baxter's gardener—4th, to John Perkins, C. J. Duval's gardener—5th, to J. Jones, G. J. Leiper's gardener.

HONEY.—For the best display, to J. Foulke—2d, to F. Parkerson—3d, to Edwin Middleton.

The Committee have taken favorable notice of the following, viz: several stalks of Buckwheat, a fine sample of six acres on the farm of Com. Stewart, upwards of four feet in height.

POTATOES.—From Joseph A. Burroughs, N. J.; Samuel Ott, Joseph Clement, Wm. Parry, N. J., D. R. Harper, Jacob Engleman, and Seedling by David Ruddack; also a specimen from Tubers, brought from the mountains of Peru, said to be fine—grown on the farm of Francis King.

TOMATOES.—From David Ruddack, Thomas Field, and Charles Hutchinson. Sugar Pumpkin, from Anthony Felten. Valparaiso Squash, from Thomas Field. Sugar Beets, from James S. Peters. Scholymus hispanicus, a fine specimen, from Isaac B. Baxter. Honey, from Daniel Trites.

Egyptian Corn, from the garden of Gen. Patterson, the seed of which was obtained from a mummy 2,000 years old. A stalk of corn 15 feet high, from the garden of J. G. Whelan. A new variety of Egg Plant, from C. J. Duval, Germantown. A fine display of Vegetables, from Miss Gratz, among which was a new variety of Sugar Pumpkin, a new variety of Egg Plant and Cucumbers.

Collections of Vegetables, by John Riley, from Insane Hospital, Geo. B. Howard, Delaware county, and Caleb Cope.

All of which is respectfully submitted. ISAAC B. BAXTER, EDWIN MEREDITH, WILLIAM JOHNS, HENRY A. DREER, PETER RAABE, Committee.

To the President and members of the Pennsylvania Horticultural Society:—The Committee appointed to award the Society's premiums for Flowers, Designs, etc., at its Nineteenth Annual Exhibition, held on the 15th, 16th, and 17th September, 1847, beg leave respectfully to make the following report, viz:

Dahlias.—For the best 20 blooms, named varieties, to Gerhard Schmitz—2d, to do.—American Seedling, parti-colored, to do.—Self-colored, to do.

Roses.—For the best display, six named varieties, to A. Dryburgh.

Russellia Juncea.—For the best specimen in flower, in a pot, to B. Daniels, gardener to C. Cope.

Manettia Glabra.—For the best specimen in flower, in a pot, to B. Daniels, gardener to C. Cope.

Hoya Carnosa.—For the best specimen to Robt. Kilvington.

Verbena.—For the best specimen in flower, to Henry Cooper.

Verbenas.—For the best three varieties in pots, to Henry Cooper—2d, to do.

Ferns.—For the best display, in pots, to Robt. Kilvington.

Petunias.—For the best, two specimens, in pots, to B. Gulliss, gardener to J. Snider, jr., Esq.

Achimenes.—For the best display, to Wm. Sinton, gardener to G. W. Carpenter, Esq.

Oreioidea.—For the best display, to James Bisset, gardener to James Dundas, Esq.

Designs formed of cut Flowers.—For the best and most appropriate, to A. Dryburgh, for his representation of a monument, Sir Walter Scott's—2d, to P. Gallagher, gardener to Miss Gratz, for a beautiful Harp—3d, to A. Henderson, gardener to T. W. Smith, Esq., for a handsome Floral Temple—

4th, to Alex. Caie, gardener to Mrs. Camac, for a representation of a Flower Garden—5th, to A. Henderson, gardener to T. W. Smith, Esq., for a design of a Rural Fountain—6th, to do., for a Rural Temple—7th, to Peter Raabe, for a beautiful Triumphant Arch—8th, to Joseph Cook, for a Rural Summer Arbor—9th, to Wm. Maupay, for a Floral Design—10th, to John Sherwood, for a pretty Arbor festooned with Grapes—11th, to Jos. Cooke, for a very pretty Centre Table.

Bouquets for the Centre Table.—For the best and most approved, and for the second best and most approved, none presented.

For the third best and most approved, to P. Carolan, gardener to Samuel Welsh, Esq.—4th, to B. Daniels, gardener to C. Cope.

For the best of indigenous Flowers, to Jno. McIntosh, gardener to R. Kilvington—2d, to R. Henery, gardener to Geo. Blight, Esq.

For the best basket of Flowers, to Mrs. Peter Mackenzie—2d, to B. Daniels, gardener to C. Cope—3d, to P. Carolan, gardener to S. Welsh.

Wreaths.—For the best pair, for festooning, to A. Henderson, gardener to T. W. Smith—2d, to do.

Your committee have to notice, and they do so with unfeigned pleasure, many Designs and Bouquets of cut Flowers contributed from the friends of the Society, from far and near—the names of the respective donors will appear in the Recording Secretary's general report; they cannot, however, refrain from noticing particularly those from West Chester, and to which they have given special premiums. It would be impossible to award premiums to all the Floral objects exhibited—your Committee have, therefore, upon this occasion, endeavored to distribute to the most deserving, and trust that their decisions will be duly appreciated. They recommend the following premiums to be awarded as special ones by the Society, viz:

Fifteen dollars to Peter Raabe, for a beautiful Design in imitation of rock-work, covered with moss and appropriate plants—surmounted by the American Eagle, bearing the following scroll in his beak—"The Horticultural Society's 19th Exhibition." This unique design was placed in the front of the room appropriated for Plants, and added very much to the enchanting *Coup d'œil* on entering this splendid floral saloon.

Five dollars to A. Henderson, gardener to Thos. W. Smith, Esq., for a Floral Chair and Canopy.

Three dollars to Mrs. G. M. Hoopes, West Chester, for a basket of indigenous Flowers, containing upwards of 70 species, beautifully and tastefully arranged.

Two dollars to Miss Annie E. Townsend, West Chester, for a basket of indigenous Flowers, beautifully arranged, and which added very much to the enchanting scene of that portion of the room to which it was allotted.

Four dollars to Mr. Davis Garrett, of West Chester, for a handsome Floral Arch, which added to the scenic effect of the grove on the gallery.

Two dollars to Miss Rebecca L. Reid, West Chester, for a pretty model of Flora's Cottage.

Three dollars to John Dougherty, Laurel Hill, for a handsome Floral Flag.

Two dollars to Mrs. Newberry A. Smith, for two very beautiful basket Bouquets.

Three dollars so Joseph Cook, for a very neat and pretty Heraldic Design, formed of cut flowers.

Two dollars to Mrs. A. Henderson, for a beautiful basket Bouquet.

Three dollars to R. Henery, gardener to George Blight, Esq., for a very pretty design of a Harp.

Three dollars to A. Henderson, gardener to T. W. Smith, Esq., for a pair of pretty Vases.

Two dollars to A. Henderson, gardener to do., for a Floral Centre Table.

In closing their report, your committee beg leave to offer their warmest thanks to the Ladies who so kindly attended to the arranging of the Cut Flowers, &c., thereby adding, very materially, by their taste, to the general exhibition.

All of which is respectfully submitted. THOS. C. PERCIVAL, W. H. DILLINGHAM, R. PRICE, GAVIN WATSON, ROBT BURGESS, Committee.



Horticulturist

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

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No. 7.

THE CULTURE OF THE SOIL may be viewed in two very different aspects. In one, it is a mean and ignorant employment. It is a moral servitude, which man is condemned to pay to fields perpetually doomed to bear thorns and thistles. It is an unmeaning routine of planting and sowing, to earn bread enough to satisfy the hunger and cover the nakedness of the race. And it is performed in this light, by the servants of the soil, in a routine as simple, and with a spirit scarcely more intelligent than that of the beasts which draw the plough that tears open the bosom of a hard and ungenial earth!

What is the other aspect in which agriculture may be viewed? Very different indeed. It is an employment at once the most natural, noble and independent that can engage the energies of man. It brings the whole earth into subjection. It transforms unproductive tracts into fruitful fields and gardens. It raises man out of the uncertain and wild life of the fisher and hunter, into that where all the best institutions of society have their birth. It is the mother of all the arts, all the commerce, and all the industrial employments that maintain the civilization of the world. It is full of the most profound physical wonders, and in-

volves an insight into the whole history of the planet, and the hidden laws that govern that most common and palpable, and yet most wonderful and incomprehensible substance—matter! There has never yet lived one who has been philosopher enough to penetrate farther than the outer vestibules of its great temples of truth; and there are mysteries enough yet unexplained in that every day miracle, the growth of an acorn, to excite for ages the attention and admiration of the most profound worshipper of God's works.

Fortunately for us and for our age, too much light has already dawned upon us to allow intelligent men ever to relapse into any such degrading view of the aim and rights of the cultivator as that first presented. We have too generally ascertained the value of science, imperfect as it still is, applied to farming and gardening, to be contented any more to go back to that condition of things when a crooked tree was used for a plough, and nuts and wild berries were sufficient to satisfy the rude appetite of man. The natural sciences have lately opened new revelations to us of the hidden problems of growth, nutrition and decay, in the vegetable and animal kingdoms. Secrets have been laid bare that

give us a new key to power, in our attempts to gain the mastery over matter, and we are continually on the alert to verify and put in practice our newly acquired knowledge, or to add in every possible way to the old stock. Men are no longer contented to reap short crops from worn out soil. They look for scientific means of renovating it. They would make the earth do its utmost. Agriculture is thus losing its old character of being merely physical drudgery, and is rapidly becoming a science, full of profound interest, as well as a grand practical art, which, Atlas-like, bears the burden of the world on its back.

It is not to be denied that CHEMISTRY is the great railroad which has lately been opened, graded and partially set in operation, to facilitate progress through that wide and comparatively unexplored territory—*scientific cultivation*: chemistry, which has scrutinised and analysed till she has made many things, formerly doubtful and hidden, as clear as noon-day. And it is by watching her movements closely, by testing her theories by practice, by seizing every valuable suggestion, and working out her problems patiently and fairly, that the cultivator is mainly to hope for progress in the future.

No one who applies his reasoning powers to the subject will fail to see, also, how many interesting points are yet in obscurity; how many important facts are only just beginning to dawn upon the patient investigator; how much is yet to be learned only by repeated experiments; and how many fail who expect to get *immediate* replies from nature, to questions whose satisfactory solution must depend upon a variety of preliminary knowledge, only to be gathered slowly and patiently, by those who are unceasing in their devotion to her teachings.

There are no means of calculating how much chemistry has done for agriculture within the last ten years. We say this, not in the sanguine spirit of one who reads a volume on agricultural chemistry for the first time, and imagines that by the application of a few salts he can directly change barren fields into fertile bottoms, and raise 100 bushels of corn where 20 grew before. But we say it after no little observation of the results of experimental farming—full of failures and errors, with only occasional examples of brilliant success—as it is.

There are numbers of readers who, seeing the partial operations of nature laid bare, imagine that the whole secret of assimilation is discovered, and by taking too short a route to the end in view, they destroy all. They may be likened to those intellectual sluggards who are captivated by certain *easy roads to learning*, the gates of which are kept by those who teach every branch of human wisdom in *six lessons*! This gallop into the futurity of laborious effort, generally produces a giddiness that is almost equivalent to the obliteration of all one's power of discernment. And though one may, now, by the aid of magnetism, "put a girdle round the earth" in *less* than "forty minutes," there are still conditions of nature that imperiously demand time and space.

Granting, therefore, that there are hundreds who have failed in their experiments with agricultural chemistry, still we contend that there are a few of the more skilful and thorough experimenters who have been eminently successful; and *whose success will gradually form the basis of a new and improved system of agriculture*.

More than this, the attention which has been drawn to the value of careful and intelligent culture, is producing indirectly the most valuable results. Twenty years ago

not one person in ten thousand, cultivating the land, among us, thought of any other means of enriching it than that of supplying it with barn-yard manure. At the present moment there is not an intelligent farmer in the country who is not conversant with the economy and value of muck, ashes, lime, marl, bones and a number of less important fertilizers. In all the older and less fertile parts of the country, where manure is no longer cheap, the use of these fertilizers has enabled agriculturists of limited means to keep their land in high condition, and add thirty per cent. to their crops. And any one who will take the trouble to examine into the matter in our principal cities, will find that fifty articles, in the aggregate of enormous value for manure to the farmer and gardener, which were until lately entirely thrown away, are now preserved, are articles of commerce, and are all turned to the utmost account as food for the crops.

We have been led into this train of thought by observing that after the great staple of the agriculturist—bread stuffs and the grasses—have had that first attention at the hands of the chemist which they so eminently deserve, some investigation is now going on for the benefit of the horticulturist and the orchardist, of which it is our duty to keep our readers informed. We allude to the analyses which have been made of the composition of the inorganic parts of vegetables, and more especially of some of the *fruit trees* whose culture is becoming an object of so much importance to this country.

We think no one at all familiar with modern chemistry or scientific agriculture, can for a moment deny the value of *specific manures*. It is the great platform upon which the scientific culture of the present day stands, and which raises it so high

above the old empirical routine of the last century. But in order to be able to make practical application, with any tolerable chance of success, of the doctrine of special manures, we must have before us careful analyses of the composition of the plants we propose to cultivate. Science has proved to us that there are substances which are of universal value as food for plants; but it is now no less certain that, as the composition of different plants, and even different species of plants, differs very widely, so must certain substances essential to the growth of the plant be present in the soil, or that growth is feeble and imperfect.

A little observation will satisfy any careful inquirer, that but little is yet practically known of the proper mode of *manuring orchards*, and rendering them uniformly productive. To say that in almost every neighborhood, orchards will be found which bear large crops of fine fruit, while others not half a mile off, produce only small crops; that in one part of the country a given kind of fruit is always large and fair, and in another it is always spotted and defective; that barn-yard manure seems to produce but little effect in remedying these evils; that orchards often nearly cease bearing while yet the trees are in full maturity, and by no means in a worn out or dying condition: to say all this, is only to repeat what every experienced cultivator of orchards is familiar with, but for which few or no practical cultivators have the explanation ready.

We have seen a heavy application of common manure made to apple trees, which were in this inexplicable condition of bearing no sound fruit, without producing any good effects. The trees grew more luxuriantly, but the fruit was still knotty and inferior. In this state of things, the baffled practical man, very properly attributes it to

some inherent defect in the soil, and looks to the chemist for aid.

We are glad to be able to say, this aid is forthcoming. Many valuable analyses of the *ashes* of trees and plants, have been made lately at *Giessen*, and may be found in the appendix to the *last edition* of *LIEBIG'S Agricultural Chemistry*.* And still more recently, Dr. *EMMONS* of Albany, well known by his labors in the cause of scientific agriculture,† has devoted considerable time and attention to ascertaining the elements which enter into the composition of the *inorganic parts of trees*.

The result of this investigation we consider of the highest importance to the fruit cultivator and the orchardist. In fact, though still imperfect, it clears up many difficult points, and gives us some basis for a more philosophical system of manuring orchards than has yet prevailed.

The importance of the gaseous and more soluble manures—ammonia, nitrogen, etc., to the whole vegetable kingdom, has long been pretty thoroughly appreciated. The old-fashioned, practical man, dating from Noah's time, who stands by his well-rotted barn-yard compost, and the new-school disciple, who uses guano and liquid manures, are both ready witnesses to prove the universal and vital importance of these animal fertilizers,—manures that accelerate the growth and give volume and bulk to every part of a tree or plant.

But the value and importance of the heavier and more insoluble earthy elements have often been disputed, and, though ably demonstrated of late, there are still comparatively few who understand their application, or who have any clear and definite ideas of their value in the economy of vegetable structure.

* Published by Wiley & Putnam, New-York.

† See his quarto vol. on the *Agriculture of New-York*, lately published, and forming part of the State survey.

To get at the exact quantities of these ingredients, which enter into the composition of plants, it is necessary to analyse their *ashes*.

It is not our purpose, at the present moment, to go beyond the limits of the orchard. We shall therefore confine ourselves to the most important elements which make up the wood and bark of the *apple*, the *pear*, and the *grape vine*.

According to Dr. *EMMONS'S* analysis, in 100 parts of the ashes of the *sap-wood* of the apple tree, there are three elements that greatly preponderate, as follows: 16 parts *potash*, 17 parts *phosphate of lime*, and 18 parts *lime*. In the *bark* of this tree, there are 4 parts *potash* and 51 parts *lime*.

100 parts of the ashes of the *sap-wood* of the *pear* tree, show 22 parts of *potash*, 27 parts of *phosphate of lime*, and 12 parts of *lime*; the *bark* giving 6 parts of *potash*, 6 parts of *phosphate*, and 30 parts of *lime*.

The analysis of the common wild *grape vine*, shows 20 parts of *potash*, 15 parts *phosphate of lime*, and 17 parts *lime* to every 100 parts; the *bark* giving 1 part *potash*, 5 parts *phosphate of lime*, and 39 parts of *lime*.

Now, no intelligent cultivator can examine these results (which we have given thus in the rough* to simplify the matter,) without being conscious at a glance, that this large necessity existing in these fruit trees for *potash*, *phosphate of lime*, and *lime*, is not at all provided for by the common system of

* The following are Dr. Emons's exact analyses:

ASH OF THE PEAR.

	<i>Sap-wood.</i>	<i>Bark.</i>
Potash,	22.25	6.20
Soda,	1.64	
Chlorine,	0.31	1.70
Sulphuric acid,	0.50	1.80
Phosphate of lime,	27.22	6.50
Phosphate of peroxide of iron,	0.31	
Carbonic acid,	27.69	37.29
Lime,	12.64	30.36
Magnesia,	3.00	9.40
Silex,	0.30	0.40
Coal,	0.17	0.65
Organic matter,	4.02	4.20
	100.25	98.30

manuring orchards. Hence, in certain soils where a part or all of these elements naturally exist, we see both the finest fruit and extraordinary productiveness in the orchards. In other soils, well suited perhaps for many other crops, orchards languish and are found unprofitable.

More than this, Dr. EMMONS has pointed out what is perhaps known to few of our readers, that these inorganic substances form, as it were, the skeleton or bones of all vegetables as they do more tangibly in animals. The bones of animals are lime—in the form of phosphate and carbonate—and the frailer net-work skeleton of trunk, leaves and fibres in plants, is formed of precisely the same substance. The bark, the veins and nerves of the leaves, the skin of fruit, are all formed upon a frame-work of this organized salt of lime, which, in the growth of the plant, is taken up from the soil, and circulates freely to the outer extremities of the tree or plant in all directions.

As these elements, which we have named

as forming so large a part of the ashes of plants, are found in animal manures, the latter are quite sufficient in soils where they are not naturally deficient. But, on the other hand, where the soil is wanting in lime, potash, and phosphate of lime, common manures will not and do not answer the purpose. Experience has abundantly proved the latter position; and science has at length pointed out the cause of the failure.

The remedy is simple enough. Lime, potash and bones (which latter abound in the phosphate,) are cheap materials, easily obtained in any part of the country. If they are not at hand, common *wood ashes*, which contains all of them, is an easy substitute, and one which may be used in much larger quantities than it is commonly applied, with the most decided benefit to all fruit trees.

The more scientific cultivator of fruit will not fail, however, to observe that there is a very marked difference in the proportion of these inorganic matters in the ashes of the trees under our notice. Thus, potash and phosphate of lime enter much more largely into the composition of the pear than they do in that of the apple tree; while lime is much more abundant in the apple than in the pear; the ashes of the bark of the apple tree being more *than half lime*. Potash and lime are also found to be the predominant elements of the inorganic structure of the grape vine.

Hence *potash* and *bone dust* will be the principal substances to nourish the structure of the pear tree; *lime*, the principal substance for the apple; and *potash* for the grape vine; though each of the others are also highly essential.

Since these salts of lime penetrate to the remotest extremities of the tree; since, indeed, they are the foundation upon which

ASH OF THE APPLE.

	<i>Sap-wood.</i>	<i>Bark.</i>
Potash,	16.19	4.930
Soda,	3.11	3.285
Chloride of sodium,	0.42	0.540
Sulphate of lime,	0.05	0.637
Phosphate of peroxide of iron,	0.80	0.375
Phosphate of lime,	17.50	2.425
Phosphate of magnesia,	0.20	
Carbonic acid,	29.10	44.830
Lime,	18.63	51.578
Magnesia,	8.40	0.150
Silica,	0.85	0.200
Soluble silica,	0.80	0.400
Organic matter,	4.60	2.100
	109.65	109.450

COMMON WILD GRAPE VINE.

	<i>Wood.</i>	<i>Bark.</i>
Potash,	20.84	1.77
Soda,	2.06	0.27
Chlorine,	0.02	0.40
Sulphuric acid,	0.23	trace.
Phosphate of lime,	15.40	5.64
Phosphate of peroxide of iron,	1.20	5.04
Carbonic acid,	34.83	32.22
Lime,	17.33	39.32
Magnesia,	4.40	0.80
Silex,	2.80	14.00
Soluble silica,	0.00	0.30
Coal and organic matter,	2.20	1.70
	100.21	100.86

a healthy structure of all the other parts must rest, it appears to us a rational deduction that upon their presence, in sufficient quantity, must depend largely the general healthy condition of the leaves and fruit. Hence, it is not unlikely that certain diseases of fruit, known as the bitter rot in apples, the mildew in grapes, and "cracking" in pears, known and confined to certain districts of the country, may arise from a deficiency of these inorganic elements in the soil of those districts, (not overlooking *sulphate of iron*, so marked in its effect on the health of foliage.) Careful experiment will determine this; and if such should prove to be the case, one of the greatest obstacles to universal orchard culture will be easily removed.*

What we have here endeavored to convey of the importance of certain specific manures for fruit trees, is by no means all theory. We could already give numerous practical illustrations to fortify it. Two will perhaps suffice for the present.

The greatest orchard in America, most undeniably, is that at Pelham farm, on the Hudson. How many barrels of apples are raised there annually, we are not informed. But we do know, first, that the crop this season, numbered *several thousand barrels* of Newtown pippins, of a size, flavor and beauty that we never saw surpassed; and second, that the Pelham Newtown pippins are as well known in Covent garden market, London, as a Bank of England note, and can as readily be turned into cash, with the

highest premium over any other goods and chattels of the like description. Now the great secret of the orchard culture at the Pelham farm, is the *abundant use of lime*. Not that high culture and plenty of other necessary food are wanting; but that lime is the great basis of large crops and smooth, high flavored fruit.

Again, the greatest difficulty in fruit culture in America, is to grow the foreign grape in the open air. It is not heat nor fertility that is wanting, for one section or another of the country can give both these in perfection; but in all sections the fruit mildews, and is, on the whole, nearly worthless. An intelligent cultivator, living in a warm and genial corner of Canada West, (bordering on the western part of Lake Erie,) had been more than usually successful for several seasons in maturing several varieties of foreign grapes in the open air. At length they began to fail—even upon the young vines, and the mildew made its appearance to render nearly the whole crop worthless. Last season, this gentleman, following a hint in this journal, gave one of his grape borders a *heavy dressing of wood ashes*. These ashes contained, of course, both the potash and the lime, so necessary to the grape. He had the satisfaction of raising, this season, a crop of fair and excellent grapes, (of which we had ocular proof,) from this border, while the other vines of the same age (and treated, otherwise, in the same way,) bore only mildewed and worthless fruit. We consider both these instances excellent illustrations of the value of specific manures.

We promise to return to this subject again. In the mean time it may not be useless to caution some of our readers against pursuing the *wholesale* course with specifics which all quack doctors are so fond of recommending—i. e., "if a thing is

* It will be remembered that, in our work on Fruits, we opposed the theory that all the old pears, liable to *crack* along the sea coast, and in some other sections of the country, were "worn out." We attributed their apparent decline to unfavorable soil, injudicious culture and ungenial climate. A good deal of observation since those views were published, has convinced us that "cracking" in the pear is to be attributed more to an exhaustion, or a want of, certain necessary elements in the soil, than to any other cause. Age has little or nothing to do with it, since *Van Mon's Leon Le Clerc*, one of the newest and most vigorous of pears, has cracked in some soils for the past two years around Boston, though perfectly fair in other soils there, and in the interior.

good, you cannot give too much." A tree is not all *bones*, and therefore something must be considered besides its anatomical structure—important as that may be. The good, old-fashioned, substantial nourishment must not be withheld, and a suitable ration from the compost or manure heap, as usual, will by no means prevent our orchards being benefitted all the more by the substances of which they have especial need, in certain portions of their organization.

REMARKS ON GARDENING AS A SCIENCE.—No. 7.

BY DR. WM. W. VALK, FLUSHING, L. I.

AIR.—PROF. LIEBIG has undoubtedly put forth some astounding disclosures respecting certain atmospherical phenomena, which, were they not familiar to most reflecting minds, would be regarded with surprise and awe. On one point he thus expresses himself:—"Although the absolute quantity of oxygen contained in the atmosphere, appears very great when represented by numbers, yet it is not inexhaustible. One man consumes by respiration about forty-five Hessian cubic feet (nearly twenty-five English,) of oxygen in twenty-four hours; and a small town like Giessen, with about 7000 inhabitants, extracts yearly from the air, by the wood employed as fuel, more than 1000 millions of cubic feet of this gas." Every act of respiration, of combustion, and of fermentation, develops carbonic acid, which passes into, and blends with the atmospheric volume; but this gas will be further noticed at some future time.

We have said that the atmospheric gases are only *mixed*—not chemically united; and as this proposition has been satisfactorily demonstrated by Dr. DALTON and other chemists, the conclusion is both reasonable and correct, that the atmosphere is not a chemical compound in the ordinary acceptation of that term. It now remains to inquire what agency it exerts upon vegetable

life? In order, however, to afford scope for reflection, let us refer to the *Gardeners' Magazine* (English) for 1834, vol. x. page 207. There, is an article by Mr. N. B. WARD, "*On growing Ferns and other plants in glass cases*, in the midst of the smoke of London." This gentleman thus writes:—"I was accidentally led, about four or five years ago, to make some experiments on the growth of ferns, &c., in closely glazed vessels, from the following circumstances: I had buried the chrysalis of a sphinx in some moist mould in a large bottle, covered with a lid. The insect attained its perfect form in about a month, when I observed one or two minute specks of vegetation upon the surface of the mould. Curious to observe the development of plants in so confined a situation, I placed the bottle outside one of my windows with a northern aspect: the plants proved to be one of *Poa annua*, and one of *Nephrodium* (*Asplenium*, Swz.) *filix mas*. In this situation they lived for more than three years; during which time no fresh water was given them, nor was the lid removed. The fern produced four or five new fronds every year; and the *Poa* flowered the second year, but did not ripen its seeds. Both plants ultimately perished from the admission of rain water, in consequence of the rusting of the lid." Thus

excluded from all air, did Mr. Ward succeed in growing not only "more than sixty species of fern," (these are enumerated) but he also grew with the like success, *Oxalis acetosella*, *Anemone nemorosa*, *Dentaria bulbifera*, and a great many more.

"The ferns, &c., may be placed in boxes of any size or shape, furnished with glazed sides and a glazed lid. The bottom of the box should be filled with nearly equal portions of bog-moss, vegetable mould, and sand; and the ferns, after planting, should be most copiously watered, and the superfluous water allowed to drain off through a plug-hole in the bottom of the box; the plug is then to be put in tight, the lid put on, and no farther care is requisite than that of keeping the box in the light. *In this way plants will grow for years without any fresh supply of water.*"

In 1842, after Mr. WARD's plants had been thus grown for eight years, the collection was inspected by Mr. PAXTON. It then consisted of glass cases, in the windows facing the south, the enclosed atmosphere of which is sometimes raised by solar heat to 100°; also, "of a close sort of fossil green-house at the back of the house, glazed with puttied laps, which resembles a kind of damp grotto. The external surface of the lights was quite disfigured with the soot which abounds in the atmosphere; yet in this gloomy and extremely damp erection, ferns of all climates flourish in verdant health; and not only ferns, but *Thunbergia*, *Begonia*, *Fuchsias*, and other plants, which are the ornaments of our stoves and green-houses. In the cases, no air can enter but what passes through the mould; and yet, some Orchidaceæ and tropical plants thrive and even bloom, although neither air has been admitted for seven years, nor any water given for more than five months."

Now such *facts* as these are worth a host of theories, and afford proof beyond all controversy, that the free admission of air is *not* indispensably necessary to healthy or even luxuriant vegetation. During the whole of last summer, we grew a collection of plants in a "Ward's case," 4 feet long, 2 feet 6 inches wide, and 3 feet high. The bottom of the case is 6 inches deep, and lined with zinc; it stands on castors, and resembles a miniature conservatory. Our plants are in pots, and these are the names:—*Alona celestis*, *Abelia floribunda*, *Statice Wildenovii*, *Berberis trifoliata*, *Poinciana Gilliesii*, *Jasminum affine*, *Azalea ovata*, *Echiveria rosea*, *Cereus crenatus*, *Polypodeum aureum* (fern), *Platyceium alci-come* (fern), *Maxillaria aromatica* (orchid), *Camellia de la Reine*, and a few others. These all flourished from April to October without air or water, except what they received when put in; and although the habits of the plants are by no means the same, each seemed to be as much "at home" as could be desired. By accident, the top of the case was badly broken, the plants were removed to the green-house and treated as usual; since which time, though all are in good order, yet they want that clean and thrifty appearance so manifest while they were in the case. For the cultivation of plants in the parlor and drawing-room, these cases are admirably well adapted; and if made with taste as they should be for such uses, and filled with carefully selected specimens, they would soon become fashionable and very much sought after.

Air doubtless promotes the fecundity and maturation of plants; it checks luxuriant growth, favors the development of the floral organs, promotes evaporation, and carries off moisture rapidly; but if we seek in it the supply of nutrimental matter, we

shall possibly be disappointed. It is to the carbonic acid, and the aqueous vapor held in solution, that we must refer: the first acts directly upon the foliage; the second indirectly, in the form of rain, or dewey moisture—agencies forming no part of the subject now treated of. Whatever tends to decompose air by the abstraction of oxygen deteriorates it, as we have seen; but is there any reason to suppose that plants decompose air? If they do not, then is air to be regarded only as a vehicle or medium to receive and transmit gaseous matters.

This view of the subject is very materially elucidated by Mr. WARD's experiment. Air so impure as that of many parts of London, is deadly to vegetation; but that which penetrates through the soil in Mr. W.'s cases, or the almost sealed glazing of his fernery, is purified by filtration, and the plants are as verdant as in their natural habitats. Do not these facts prove that we are too liberal in our applications of air; and would not the major part of our tender plants thrive equally well with closed glasses, and even with puttied laps? Moisture would be more regularly maintained and distributed: the most brilliant light would be better supported, and vegetation be consequently far more luxuriant. A fig tree

in full foliage has been removed from a stove to the open air, and within twelve hours had not a single living leaf upon it. Air checks but does not harden; it ripens the wood, and therefore promotes bloom: hence its great use to pelargoniums, heaths, and many hard-wooded plants. But it is prejudicial to luxuriant growth, and therefore should not be permitted to enter any house in the form of a current, and especially as it is a known fact that plants support uninjured a much higher as well as lower temperature in close situations. To ascertain the true agency of air in plant growing, experiments should be widely instituted; for, after what we have seen, it becomes an important question whether, as a general thing, we are not at infinite pains to ventilate our plant-houses, with no other or better result than incurring much trouble without any sort of advantage.

WM. W. VALK, M. D.

Flushing, L. I., Nov. 1847.

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[Our correspondent does not, we suppose, deny the superior growth and luxuriance of plants in houses heated in the "Polmaise" mode, now so popular in England, in which a stream of warm air is continually introduced, over those heated in the old way with little ventilation. ED.]

PROFITS OF FRUIT CULTURE.

BY B. G. BOSWELL, PHILADELPHIA.

HAVING seen in a late number of the Horticulturist, an account of a cherry tree that produced ten dollars worth of fruit in one season, permit me to give a chapter of facts on fruits, most of which are within my own personal knowledge.

C. A. CABLE, of Cleveland, has an orchard of an hundred cherry trees, now 22

years old. In the year 1845, his crop sold for upwards of one thousand dollars. Mr. C. manages his orchard better than any other person in the Union, so far as my knowledge extends. The trees are planted out twenty-five feet apart, the ground kept properly enriched and cultivated, but no crop is put in.

ELISHA SWAIN, of Darby, near Philadelphia, has the remains of a cherry orchard, numbering seventy trees, mostly of the Mayduke variety. In the height of the season, his sales amount to upwards of eighty dollars per day. Mr. S., to ensure a good crop every season, digs in a horse-cart load of manure to each tree in autumn.

HILL PENNELL, of Darby, has twenty apple trees, of the Early Redstreak and Early Queen varieties, that stand on half an acre of ground. In 1846 these trees produced three hundred bushels of fruit that sold in Philadelphia market for 75 cents per bushel, or two hundred and twenty-five dollars for the crop.

Mr. PENNELL has a grape vine of the Raccoon [Fox grape] variety, that covers the tops of fourteen apple trees. It has never been pruned, but produces seventy-five bushels of grapes yearly, that sell for one dollar per bushel. The apple trees produce good crops of fruit, and under the trees is produced a crop of grass; thus making three crops from one lot of ground.

JAMES LAWS, of Philadelphia, has a Washington plum tree, that produces six bushels of fruit yearly, that would sell in market for ten dollars per bushel. Five of the above plums weigh a pound.

Mr. LAWS has a small vineyard of Isabella and Catawba grapes, near Chester, sixteen miles below Philadelphia, three-eighths of an acre of which came into bearing in 1845. The sales amounted to three hundred dollars at eight cents per pound, or at the rate of eight hundred dollars per acre from vines only four years old.

BRINTON DARLINGTON, of West^{*} Chester, Pa., has a Catawba grape vine, that produces ten bushels of grapes yearly. This crop is worth forty dollars at market price.

JACOB STEINMENTZ, of Philadelphia, has a Blue Gage plum tree, that produces ten

bushels of fruit in a season, worth in market, thirty dollars.

My friend, ELLWOOD HARVEY, Chaddsford, Pa., the present season gathered thirteen quarts of gooseberries from one plant.

A gardener near Philadelphia, has two rows of gooseberry plants, one hundred and fifty feet long. One afternoon, he gathered with his own hands, six bushels of fruit, and the next morning sold them in Philadelphia market for twenty-four dollars.

A gentleman of Philadelphia having two apricot trees, that produced more fruit than his family could consume, concluded to send the balance to market, and expend the money it would bring in purchasing wood for the poor.

JUDGE LINE, of Carlisle, Pa., has had two Syrian apricot trees that have produced five bushels to each tree in a season. In the Philadelphia market, they would have commanded one hundred and twenty dollars, in the New-York market one hundred and forty dollars.

HUGH HATCH, of Camden, N. J., has four Tewksbury Winter Blush apple trees, that in 1846 produced one hundred and forty market baskets of apples. Without any extra care, ninety baskets of these were on hand late in the spring of 1847, when they readily sold at one dollar per basket.

The following facts relative to fruit growing near the North river, I have never seen published. Three years ago, Mr. CHARLES DOWNING, of Newburgh, N. Y., informed me that a fruit-grower of his acquaintance in Fishkill Landing, N. Y., had gathered fifteen barrels of Lady apples from one tree, and sold them in New-York for forty-five dollars. The same gentleman you speak of, in your Fruits and Fruit Trees of America, as having sent to New-York, sixteen hundred bushels of plums in one season, has sent to New-York apricots and re-

ceived fourteen dollars per bushel for them. The above gentleman has often said, that his plum trees, which are set out about the buildings, and take up but little room, pay him more profit than the whole of his valuable farm of two hundred acres. Another fruit-grower in your neighborhood, has sent four hundred bushels of Frost Gage plums, to market in one season, and received twelve hundred dollars for them.

Yet with all these facts before us, there is no full supply of any kind of fruit in the Philadelphia market, except peaches. Many

farmers and gardeners neglect setting out fruit trees from a natural negligence; others dislike to pay fifty cents for a fine plum tree; others again are afraid that every body will go to fruit-growing, and bring down the price to almost nothing. But we would ask, if there is any more danger of every body commencing on a large scale the culture of fruit, than there is that every body will commence the raising of onions, or the making of razor strops, or the cultivation of roses? Yours, etc.

B. G. BOSWELL.

THE DELIGHTS OF GARDENING, BY LAMARTINE.

TRANSLATED BY CHARLES KING, NEW-YORK.

THERE are many of our readers who think, doubtless, that they know by heart all the delights of the garden. To such we commend the following address. Certainly they cannot read it without feeling that much of the beauty and interest which lie hidden in this devotion to natural pursuits, were never fully revealed, until illumined by the imagination and the heart of LAMARTINE.

We owe the first sight of this fine production to CHARLES KING, Esq., who has kindly translated it also for our readers, and prefaced it by the following note:—

The charm of flowers, and of the gardener's calling, has rarely been more touchingly or eloquently expressed and illustrated, than in the following address by a distinguished poet, historian and statesman of France, M. DE LAMARTINE.

It was delivered recently at *Macon*, at the annual exhibition and meeting of the Horticultural Society of *Saone and Loire*, from which department M. DE LAMARTINE is a member of the Chamber of Deputies.

Where so much depends, as in an address so poetical and imaginative as this, upon the style and diction of the orator, a translation can but feebly

render the charm of the original. With this allowance, it may be hoped the readers of the Horticulturist will not regret the space devoted to this address.

CHARLES KING.

New-York, Nov. 16, 1847.

.....

GENTLEMEN—It belongs particularly, indeed in my judgment it should belong exclusively, to those masters of the Art whom you have just heard—to those magistrates of nature—it should above all belong to the learned and venerable Dean of Agriculture (M. JARD), who, just now in referring to me, has transferred to me as a public man the sentiments of affectionate regard with which he honors me in private life—to such men it peculiarly belongs to entertain you about the useful and attractive science of gardening, of which the fruits and the flowers but now refreshed our senses in another enclosure. Nevertheless since it has been cast upon me as the national representative of all this population, to address you, after they have spoken, I will make the attempt. But what shall I say, that every one of you does not know a thousand times better than myself?

Of all those scientific nomenclatures which designate your annual exhibitions, of all those plants which flourish and fruc-

tify beneath your hands, I only know our vine, that common stock, the tree of life, which sustains us, enriches us, which has borne us all in this region as so many bunches of men (Smiles and applause). No: I repeat it to my shame, I know horticulture only by its enjoyments, its fine flowers, its agreeable odors, its sensualities; I know it only by that unreflecting attraction, natural and instinctive, which has led men at all times, and especially men of thought and of feeling, poets, writers, philosophers, warriors — even courtiers themselves — to delight in the sight, the contemplation and the repose of gardens; to escape thither from the noise of the crowd, the gaze of the multitude, the tumults of the forum; to shut themselves up under the shade of some climbing shrub, within the sound of some running spring, there to study the phenomena, to listen, with the ear on the ground, to the almost inaudible palpitations of the earth, the murmurs of vegetable life, the circulation of the sap in the branches; and to perceive springing within their own bosoms, those thoughts, those inspirations, now pious, now amorous, now philosophical and anon heroic, which pass under the name of the *genius of solitude*; or again to come thither in the midday or the evening of life, to recover strength in that moral weariness which at certain periods enervates men of action, as bodily fatigues sometimes overtake you in the heat, or at the close of the day, and compel you to repose yourself beneath a tree you have been trimming, upon the bed you have been digging (Applause).

It is this natural taste, this sacred relationship between man and a little plot of ground more particularly appropriated, fenced in, cultivated, planted, sown, watered, and harvested by the hand of the gardener, which, in all times, have made the story of the garden a part of the story of the nation, and also given it a place in the reveries as to the future life, or the theogony of peoples. Examine all theogonies, all religions, all history, even all fable, and not one among them all that does not assign man in his origin to an Eden, that is, a garden: there is not one that, after death, does not conduct him to an Elysium; not one that does not

minge the idea of a garden abounding in living waters and in fruits, with the images and reveries of primitive felicity on Earth, of a happy hereafter in Heaven. What does all this prove, gentlemen? That the imagination of man, in all its various dreams of a paradise, has been unable to devise any thing more charming than a terrestrial or a celestial garden, with living waters, shades, flowers, fruits, a green sod, trees, a propitious sky, serene stars—a reciprocal friendship, so to speak, between man and the soil. So true is it, too, that in his most delicious reveries, man has been able to invent nothing more perfect than nature. A spot in the sunshine, protected from evil-doers, embellished by vegetation, animated by the birds of heaven and animals the friends of man, made sacred by the work of his hands, and made holy by the presence of the Creator; the habitation of the family, the abode of love, of friendship, as it has been for a succession of immortal generations. In such an abode it is that Human Nature has always placed Happiness; and is it not there you persevere in seeking it? In seeking it, not always perfect and unchangeable as in our dreams, but in seeking it at least in those brief and imperfect glimpses which it has pleased God to permit us now and then to obtain in this world below?

You do well, very well, to seek it there: for if your pursuit is the happiest of pursuits, your science is in fact the least chimerical, the least uncertain, the least disappointing, the surest of all our sciences.

Yes: for over and above all other considerations which should bind the horticulturist to his art, there is one which has often struck me, and doubtless has often struck you all, and it is that of all the arts, of all the sciences I should say, yours is the one that most truly deserves that name, which least misleads those who cultivate it, which least puzzles the brain with the chimeras of systems, and which carries man and confines him most forcibly to the Truth, by its details of application; and why so? You all know why. Because your science is wholly experimental and practical; it leaves nothing to speculation, to hypothesis, to conjecture, to the chances of the imagination: there are no metaphysics of the soil;

there are no chimeras in vegetation : rigorous, attentive, daily observation is your learning. Happily for you, you have not, like us who deal with the world of thought, of history, of politics and other departments of human knowledge ; you have not to do with the uncertainties of the human mind, with the mania of systems, with the passions, the reveries, the prejudices, sometimes with the wild fancies of schools, of sects, which render every thing obscure, which lead men on for centuries in error or in doubt, to those late awakenings, or sometimes to the brink of those abysses, where man stumbles in the paths of false knowledge, and only gathers himself up again to run after some fresher delusion. No : your pursuit gives no play to such errors, or to such repentance ; and again why ? Because in your science, you always, as it were, will have your hand upon Nature, and upon her laws, visible, palpable, mysterious indeed, but yet evident : you work, so to speak, side by side with God ! You are but co-operators with the divine laws of vegetation. But divine laws bend not to our vain caprices.

God, in his changeless works, heeds not our chimeras. Nature has no complaisance for our false systems. She is sovereign and absolute as her author. She resists our foolish attempts ; she overthrows — sometimes rudely enough — our illusions. She seconds our efforts, aids them, and rewards them abundantly if directed in the right sense ; but if we make a mistake, or attempt to force her, to compel her out of her course, she at once asserts her power, and blasts our labors with sterility, by the wasting away and the death of every thing we have attempted to effect in opposition to her laws, and in her despite. We others may with impunity make mistakes, and for ages at a time, in history, in philosophy, in religious and in social systems, even in astronomy. We may devise on these heads the most absurd chimeras, and impose them upon the world for a long time as truth. That cannot you do, gardeners and agriculturists. Your longest error cannot outlast a single season (Applause), the period of a crop, one spring, one year at most. Such is the term of your error ; for it is the term of your experiments. That once past, Nature pre-

vails, sets you right. She reveals her will to you, that you may make haste to conform your labors to it. You interrogate her unceasingly, respectfully, experimentally ; and she always makes true and prompt replies. You register those replies in your memoirs, in your books, in your manuals ; and from this intercepted dialogue between man that questions, and Nature that replies, you form those catechisms of the farmer and the gardener, which become the science of vegetation (Applause).

Thus it is through these elementary books, and these congresses of cultivators of nature, such as this now assembled, that your science is deep-rooted, extended, improved and wide-spread. Thus it has been since PLINY, who made a catalogue of all the plants within the Roman empire ; since CHARLEMAGNE, who, in his *Capitulaires*, which were in some sort his charter or constitution, particularized the sorts and the number of vegetables he wished cultivated ; since CATO, the most severe of statesmen, requiring that each Roman citizen, however poor he might be, should cultivate some flowers in his plot, in order that the elegance of such culture should contribute elegance and refinement to the manners of the people ; for though he aimed at correcting the excessive luxuriousness of the Republic, he desired no *sumptuary law* in vegetation — down to the various maritime and plant-seeking expeditions of the Crusaders, the Dutch, the English, to gather, one by one, from all parts of the globe, those ninety-eight vegetables or flowers, with which your kitchen garden or flower beds are now enamelled — the art of gardening, rudely sketched by the Romans ; greatly extended and carried almost to marvellous perfection by the Chinese ; taking, in England, the character and proportions of an aristocratic luxury ; depreciated and belittled in Holland, down almost to the adoration of a tulip ; elevated in Italy to the dignity of a splendid art, associated with statuary, sculpture and architecture ; rendered useful in France by its alliance with the higher walks of agriculture, of which it is the pathfinder — has finally, thanks to your efforts, reached in various parts of Europe the condition of a National Industry, giving employment to

millions of men, and the aliment of a commerce in fruits and flowers worth millions of money.

Thus it is, and I pray you to consider it, gentlemen, that gardening, which heretofore was only a sort of amusement or domestic luxury, an adornment of the soil, has become nowadays a new and magnificent object of commerce. At a time when labor fails for man, more than man fails for labor; at a time when to invent a new industry, is to invent wealth, occupation, wages, life itself for numberless workmen—is not this a view fitted to impress the statesman, to touch an intelligent minister of agriculture and of commerce? Do not, gentlemen, suppose this is mere hyperbole—exaggeration. I am just returned from the South, and have seen on the shores of the Mediterranean a very considerable coasting trade in flowers! Tuscany and Genoa exported to the amount of several millions of money, from their flower beds. And one art gives rise to another. After the art of successfully cultivating flowers, has come that of gathering and assorting them according to their shades, odors, colors. This art has made such progress at Genoa, for instance, has been so studied there, that they can combine, intertwine, plait, and, as it were, so weave together roses, pinks, dahlias, tulips and ranunculuses, that the bouquets prepared to decorate tables on gala days—bouquets often of a yard in circumference, resemble Turkey carpets, vegetable stuffs, odorous velvets, mosaics of plants. There are there, vegetable weavers of flowers, who turn out their perfumed fabrics; the flower girls, there as at Athens, form a class apart. The bouquets which you admire, you inhale at the *fetes* of Toulon, Marseilles, Bourdeaux, and even of Paris, are woven at Genoa or at Florence. Hence the gardening of luxury becomes each day more and more a regular business. Go on and render it more perfect, and it will one day become a fine art; a school of painting, of which the pallet will be the garden.

But whatever be the value in the eyes of the economist, of gardening industry, let us frankly admit, gentlemen, that therein does not lie the principal and eternal charm of the Garden. No : that which in all time

has rendered this pursuit so fascinating to man, and especially to the man of sensibility, the student, the poet, the man of letters, the sage, the author, the philosopher, and even the warrior, is the near and intimate relation into which it brings us with nature; the charm resulting from the study of her phenomena; the pious contemplation of the wonders of vegetation; those perpetually renewed delights in beholding the universal life, that dumb intelligence, sacred and wonderful, through all vegetable creation; those indefinite limits between vegetable and animal life, which seem to combine all organic beings in a mysterious unity, in despite of their diversities and apparent separation : it is this conviction of the divinity of nature, that has made me sometimes even tax myself with pantheism. Yet I am not a pantheist, gentlemen. No, I am not like the child, who, seeing for the first time a form in a mirror, takes the mirror and the form for one, and stretches out his hand to grasp the image. Nature, to my eyes as to yours, is the magnificent mirror, infinite, immense, in which the Creator is reflected. But Nature is to me so real, so intelligent, so divine, that I readily understand, and without difficulty excuse, him who might accuse me of confounding her with her God.

Yes, gentlemen, it is seductions such as these, which, in all time, have fixed the souls of men of reflection on the spectacle of the germination, flowering, and fructification of the plants of the garden. Shall I cite PYTHAGORAS, who inculcated it upon his disciples as a precept of wisdom, to worship *Echo* in her rural haunts; SCIPIO, at *Linterna*; DIOCLETIAN, renouncing the empire of the world for the cultivation of lettuce in his garden at *Salona*; HORACE, at *Tibur*; CICERO, at *Tusculum*, or beneath his orange trees at *Gaeta*; PLINY, describing for posterity the plan of his alleys bordered with box, and giving a list of his fancifully trimmed trees and vegetable statues; old HOMER, recalling without doubt his own paternal garden plot, in the description he gives of the little fenced-in spot of *Laertes*, shaded and overarched by his thirteen pear trees; PETRARCH at *Vaucluse*, or on the hill of *Arqua*; THEOCRITUS, beneath his Sicilian

chestnuts ; GESSNER, under his Zurich pines ; Mde. DE SEVIGNE, in her garden of *Roche*, or in her park at *Livry*, rendering her gardener immortal by a touching line, worth of itself a mausoleum, in one of her letters — “Old Paul my gardener is dead, and the trees are all sad in consequence” : and, nearer to our time, MONTESQUIEU, in the spacious alleys of his chateau of *Labrede*, evoking the shadows of dead empires and the spirit of their laws, like MACHIAVEL before him, and greater than he, in his rustic hermitage of *San Miniato* on the Tuscan hills ; VOLT-AIRE, alternating between *Delices* and *Ferney*, comprehending Lake Lemane and the Italian Alps in the horizon of his garden ; BUFFON at *Monbard*, knowing how, like Pliny in Rome, to enjoy, among the magnificent living specimens in his park, the magnificence of the nature which he described ; finally, ROUSSEAU, whom I was near forgetting, he who desired that his remains might repose beneath a poplar on an islet, in the midst of the last garden ? Ah ! that man, born to a laborious station, and brought up almost in a servile state, felt, doubtless, more intensely than another, the retirements and the consolations of solitude. How often in my early youth, in the first fever of the imagination and the soul for renowned names and genius ; how often have I gone alone, or in company with a friend whom I lost by the wayside, to visit his loved *Charmettes* ; that small house, that narrow garden, hidden in a ravine rather than a valley of the hills of Chambery, but shaded by the beautiful chestnuts of Savoy ! How many hours, how many whole days have I not spent beneath that little arbor of vines in which he so much delighted, in thinking of him, in living his life over again in imagination, in watching the last rays of the fading day make their way through the vine leaves already died with the yellow hues of autumn ; as if hoping still to find there the most sensitive, the most eloquent worshipper and observer of nature, of the vegetable creation, and of God ! (Applause interrupts the orator). I should not stop, gentlemen, if I were to name all the illustrious men who have associated themselves with their gardens. In truth one might almost rewrite the history

of all men of great genius, by that of the rural retreats where they have dwelt, and which they loved and rendered illustrious by their associations. So literally is man allied to Earth, whether at his birth, during life, or in the grave ; and thus truly does nature reassert her place in the lives of those who would have been the farthest removed from her, and the least accessible to the simple and pure enjoyments springing from the cultivation of the soil (Applause).

And believe not, gentlemen, that those enjoyments are reserved for the mighty of the earth, to the real owners of riches, or of gardens of celebrity like those of Versailles or the Tuilleries ; of which, in all time, governments have made presents to the people, in order to excite in them admiration of the power which creates such wonders, in compelling the waters, the trees and the flowers to take their places, like complaisant courtiers, around their palaces. No : there is no need of wealth, of magnificence, of extended domain, to enjoy all that God has hidden of happiness in the culture or spectacle of vegetable life. These are pleasures, which it is not given to fortune to appropriate and monopolize. Nature is never aristocratic : she has not endowed the poor with other perceptions than the rich, of natural delights ; nor the idler, than the laboring man. However vast or however contracted the space devoted by man to this pursuit, his soul can only receive the same amount of delight and gratification from its pleasures. The human soul is thus constituted, because it is infinite. Yes : the human soul is endowed with such a faculty of extension or contraction, that it can overflow the universe, and, like Alexander, find it too narrow for its desires ; or it can concentrate, and as it were fold itself up upon a mere spot of earth, and exclaim with the sage of Tibur, from his half acre sowed with mallows and watered by a little streamlet, “This little spot of earth is all the world to me !” Be assured that there was as much real delight, enjoyment, sensibility and tenderness in the soul of Rousseau, watching the last rays of the setting sun from beneath the foliage of his little vine-covered arbor at *Charmette*, as in the soul of Buffon beholding the rising sun break forth in his

glory above the lofty cedars of his park of *Montbard*! Be assured that the owner of thousands of acres, planted, laid out in walks and irrigated as gardens, on the hill-sides of England, of Scotland, or in the environs of Paris, has no feeling of nature more delicious, more overflowing, more pious, than you, when, on Sunday, you take your rest in your little enclosure, at the foot of some blossoming tree that your hands have grafted, near your two or three beehives humming in the sunshine, on the borders of the bed where you have laid down the spade, to be resumed to-morrow.

And who more than myself has felt this delight? For if you understood Latin as well as you understand the universal language of the vegetable world, I could exclaim in your midst, with the shepherd in Virgil, "*Et in Arcadia ego*," which may be rendered, *I too am a gardener*. Yes: I too had, for the cradle of my young days, a little country garden, fenced in with a dry stone wall, on one of the arid and sombre hills which you may, from this spot, perceive in the distant horizon. There was no large extent (the more than moderate mediocrity of my father's fortune permitted it not), no majestic shade, no spouting waters, no rare flowers, nor precocious fruits nor plants of luxury: there were some narrow walks, covered with a reddish sand, bordered by wild pinks, and violets and primroses surrounded the beds where grew the vegetables which supported the family. Well: there it was, and not in the gardens of Italy, or of the great landowners of France, of Germany, of England, that I enjoyed the earliest and the most intense gratifications which nature can bestow upon the sensitive and imaginative being of a child or a young man. I now dwell amid more extensive and more artistically laid out gardens; but I have retained my predilections for the first one. I preserve it carefully in its original poverty, of shade, of water, of flowers and of fruits! Ah! when I can rescue some rare moments of liberty and of solitude from the engrossing claims of public duty or literary pursuits, to commune alone with myself, it is to that garden I fly to pass them. (Emotion in the audience.) Yes, gentlemen, you will par-

don these details of the intimacy of private life: they are not out of place here. We are all fellow citizens, friends; all of the same fibre, the same flesh! Let us for a moment have in common but one soul, as we have but one country. Yes: it is in this humble enclosure, long since made desolate and empty by death; it is in these walks overrun with weeds, with moss, with the wild violets straying from their borders; it is under these old trunks, exhausted almost of their sap, but not of their memories; it is upon this unraked sand, that I still, as it were, watch for the footfall of my mother, my sisters, of former friends, of old family servants; and that, as the sun is setting, I go and seat myself against the fence facing the house, each year more and more concealed beneath the climbing ivy—plunged in reverie, amidst the hum of insects, the faint disturbance of the lizards of the old wall, that seem to me like old tenants of the garden, with which I am almost tempted to fancy sometimes I might hold communication about the days that are past. (General and prolonged signs of emotion.)

Gentlemen, it was these first pleasures of man at his entrance upon life; these early habits, this young enthusiasm of contemplation, those first tender emotions in life, in the rustic abode, the home of the family of which now the hearth is cold and extinct, that early gave me, for gardens and the simple and intelligent men who cultivate them, that predilection which brings me back so naturally and so agreeably to these annual meetings with you. The spade, the hoe, the rake, the watering pot, even the simple flower-pot in the window of the poorest laborer, are inseparably bound up in my heart with these recollections of my young life in the country, in the midst of the labors and occupations of a rustic abode and a modest garden. Excuse me, then, if I have spoken as one without knowledge. You are practical gardeners, by the labor of your hands, by study, by science: I am only one through my sensibilities and tender memories.

(The speaker then, turning to the gentlemen seated around the stand, said): And now, gentlemen, let us depart each to his

own labors. Go you, encouraged by the earnest sympathy of your neighbors and fellow countrymen; by the unanimous and touching interest manifested by the crowd, which, more successfully than any scenic representation, has filled this theatre; by that interest of the heart, which woman by her presence here evinces. Go forth to cultivate your fruits, your flowers, your vegetables, the marvels of scientific culture, in your laboratories under the noonday sun. For my part, I retire to cultivate in that old and desolate garden of my father, of which I was just speaking to you, that which a poor laborer in the domain of mind cultivates, often more exhausted with fatigue than you: study, letters, books, philosophy, history, politics; the art of governing men, of improving society, of ameliorating the condition of the people—to cause liberty and civilization to produce yet more mature and perfect fruits (Applause). But I return there, above all, to cultivate the memory of those persons and those things there loved and lost; those tender recollections of the past; those living, yet bleeding traces of a life more than half run. . . . (The speaker paused as if seeking some expression, or as if deliberating mentally with himself). I hesitate, gentlemen: I do hesitate. Ought I to go on? (Another pause). No: I will say no more. There is a diffidence in all profound emotions. We must not lay bare the inmost soul: there are tears which are only to be shed in the silence and the secrecy of the heart! . . . I go, then, to seek again in that home of my childhood, attractions more powerful for me, for us all, than the most exquisite and odorous exhibitions at your meetings; the perfume of our recollections, the odor of the past, the voluptuousness of that melancholy which is the autumnal flower of human life! All, all these are for us, emanations, as it were, from the Earth: a far-off perception, a foretaste of those *Elysiums* and those *Edens*, of those everlasting gardens, where we all hope to meet again in bliss, those whom we loved and parted from in tears! . . . All, all these which make the man who is true to nature, at whatever distance, in whatever lowliness or in however exalted station fortune may have placed him, long to return and finish his days on the spot which gave him birth, and to find at last his grave in the garden which was his cradle!

(When the speaker ceased, there was no applause; but a deep, solemn, and tender impression seemed to reign throughout the audience.)

WINE-MAKING IN THE WEST;

WITH ANSWERS BY N. LONGWORTH, TO VARIOUS QUERIES BY C. W. ELLIOTT, CINCINNATI.

THOSE who read for entertainment, will do well to pass to the latter part of this article, which contains Mr. LONGWORTH'S own account of some of the most interesting matters connected with vine-growing in the vicinity of Cincinnati.

I will first write a brief account of the usual methods here, of preparing the ground and planting a vineyard. The soil should be well broken up, to the depth of eighteen or twenty inches. This is usually done, in this neighborhood, with the *spade*; which is, however, expensive. A common practice is to put *all* the top soil at the bottom: this

does not seem to me to be so well as to mix the top and bottom, in digging or deep ploughing.

Cuttings, or vines of one or two years growth, are then planted, in the spring or fall, in rows five feet apart, and standing four feet from each other in the row: these are cut down during the *first three years*, to two eyes or buds, only one of which is allowed to make a shoot. In the *third year*, the vines may be allowed to bear a few bunches of grapes, if the roots are strong. The vines, after the third year, are pruned away, about the first of March, to one shoot

about six feet long, which produces the crop (which shoot is always bowed or bent, to check the circulation): in old and strong vines, two of these shoots are left. Care should be taken that a spire with two or three eyes is left, near the ground, to supply bearing wood for the next year, the bearing wood of this year being then cut away: thus a succession of new and vigorous wood is secured.

During the summer, the vines are thinned of superfluous branches and suckers two or three times. Many of the German vine-dressers here cut off the surface roots, in order to force the vine to draw its subsistence from below the influence of drouths; forgetting, perhaps, that it is sometimes desirable to be above that of the flooding rains. Physiologically this practice must be injurious. It is believed by many here (of whom I am one), that the strong growing native vines will do better if allowed more room and more wood. The vineyards are cultivated, during the spring and first part of summer, with the plough and cultivator, and kept clean from weeds. Many persons crop the ground with cabbages, &c.: when this is done, the manure must be given much sooner and more plentifully, as a bearing vineyard requires much food.

The grape crop suffers principally from these two things, the spring frosts and the summer rot. In a climate like this, where the summer is long and the sun powerful, planting on the *northern* slopes is some protection from the frosts, as the vines do not break their buds quite so soon. The "rot" is the great evil, and, for the past three years, has been more destructive than for any previous three years. It is possible that this may proceed from one of three causes: the loss of some ingredient in the soil, say potash; the sting of some insect,

like the *curculio*; or the excess of rain, with or without great heat. As to the first conjecture, it is hardly possible, as the new vineyards have rotted nearly or quite as badly as the old. As to the second, the only fact bearing upon it is the discovery in the must, by Mr. MYERS (spoken of by Mr. LONGWORTH), of a large number of mucitic worms. As to the third, the rot, for the past three years, has followed excessive rains in July and August. Dr. FLAGG, two years since, found a small part of a vineyard where the rot was very slight: this had not been worked after the spring, and the ground was in such a state that most of the rains passed off on the surface. Vines planted in rows eight feet apart, in one instance, were found to be affected by rot but very slightly. Vines growing on trellises, higher from the ground and with more wood, in one case this year, held their fruit much better than the common vineyard plants. The subject has been but little investigated, and therefore all can speculate.

The varieties now used, are the *Catawba* and the *Alexander's*, known here as the "Cape" (or Schuylkill Muscatel): the former makes a white, and the latter usually a red wine. The Isabella is inferior to either of these for wine-making, and rots badly. The Ohio, Lenoir and Missouri, are not used for wine-making; though quite the best [native] wine which I have seen (and which was really excellent), was made from the Missouri. The care necessary before pressing the grape, is to pick out the unripe and decaying berries; the bunches, of course, being fully ripe before being gathered. The juice should be carefully strained (if through flannel, the better) into sweet casks; and after the first strong fermentation, the casks should be closed, and left to ferment slowly in a cool cellar until

spring, when the wine is usually fit for bottling. No sugar or brandy is now added to the best wine.

When the juice is well strained and cleared from must, there is saccharine matter enough to supply alcohol, say from 7 to 11 per cent.; which is equal to the best Rhine wines. The ordinary quality of wines made here, does in no way compare with the good Rhine wines; though a small quantity made with great care by Dr. FLAGG, some years since, was said, by good judges, to be their equal. I drank last year of a bottle of the champagne made under the direction of Mr. LONGWORTH, which seemed equal to what is called "first quality" of champagne from abroad. He expects this year to make 10,000 bottles.

The price at which the wine is sold, varies from one dollar to one dollar and a half the gallon. It is mostly drank here, before being bottled, by our large German population, who, if not 'natives,' do what can be done with patience and industry to raise and consume the native wine.

It appears from a Report (made by Dr. FLAGG) published in the *Cincinnati Horticultural Society's Transactions*, that in the year 1845, (which was not a favorable one,) there were made, from 114 acres of vineyards, 23,219 gallons of wine — about 200 gallons to the acre. In successful years, the yield is from 500 to 600 gallons the acre. At the present time, something over 300 acres in this county alone, are under cultivation as vineyards. So far, vine cultivation has surely been a profitable one.

The following is a table, furnished by Mr. W. RESOR, of this place, from memoranda kept by his father through nine years. The expense of cultivation previous to first crop, also of press and casks, are not added.

ESTIMATE.

2300 vines, at 6 cents	\$138 00
2300 poles, at 2 cents	46 00
1000 do. replaced, at 2 cents .	20 00
Trenching ground and planting..	80 00
Manuring last fall	39 00
2 months work each year, 9 years,	225 00
Extra work in making wine.....	150 00
Interest on investment before crop,	15 00
	<hr/>
	\$704 00
C.R. By 4300 gallons wine, at 75 cts.	3225 50
	<hr/>
	\$2525 50

The following answers, by Mr. LONGWORTH, to various queries which I submitted to him, contain a good deal of valuable practical information, which I submit to your readers. C. W. ELLIOTT.

Cincinnati, Nov. 29, 1847.

1 Q. When did you commence your wine vineyards?

A. It is twenty-five years since I planted my first vineyard, on Baldface creek, four miles below the city, under the charge of a German of the name of Amen. He had a lease for ten years, and, the tenth year, made, by the sale of his half of the wine, 800 dollars. He went on the land without a dollar, and devoted more time to cabbage and sourcrot than his grapes, as they yielded an immediate profit which was all his own. The 800 dollars ruined the old man. He moved to the center of the State, bought a farm, and planted a vineyard. His grapes were killed by the frost; and he returned, about five years since, nearly penniless, and began a new vineyard on a small piece of land adjoining his old one. It was not till I had fully tested the experiment at this vineyard, that I increased my vineyards, and now have between 90 and 100 acres in grapes.

2 Q. With what grapes did you commence?

A. At the commencement, I planted largely with the "Cape" grape, (Alexander's, or Schuylkill Muscatel,) as this was the only grape found to succeed at Vevay. They fermented its juice on the skins, and made from it a rough, hard wine. I pressed

the grapes as soon as gathered, and made from it a wine resembling the Teneriffe.

I also tried the *Isabella* extensively, but soon ceased to cultivate it. It ripened and rotted badly, and made an indifferent wine; unless where from 24 to 32 ounces of sugar were added to the gallon, when it made a delicious sweet wine.

I obtained the Catawba soon after, from Major ADLUM; and, on its acquaintance, soon rooted out the Cape and Isabella. The Cape seldom rots, and is a sure bearer.

The *Mammoth Catawba* was a single plant, discovered in the center of my first vineyard. Of its origin I know nothing, and have never heard of it at any other place. I subsequently cultivated the *Missouri*, *Herbemont*, *Madeira*, *Lenoir*, *Ohio*, and some others, and tested their bearing character and value as wine grapes.

3 Q. The French and Madeira vines, were they tender or worthless?

A. Of foreign grapes, I imported several thousand of all the best wine grapes of Madeira, France and Germany. My last importation was 22 varieties (say 5000 plants) from the mountains of Jura, where the vine region suddenly ends. I gave them the best southern exposure on sides of hills, and expended 200 dollars on $\frac{1}{8}$ of an acre of ground, on a sidehill with a southern exposure, in my garden. I took out the natural soil to the depth of three feet; laid a layer of gravel in the bottom, two inches thick, and over it a layer of thin paving stone, and filled it up with rich earth with a portion of sand added, and a drain to carry off the rain from the bottom. They grew slowly, were subject to mildew, and, though covered in winter, would not succeed in our climate; and not a solitary plant of them is left in my garden or vineyard, except one plant of the *Meunier* (Miller's Burgundy).

In the South, foreign grapes have not succeeded much better. Messrs. HERBEMONT, M'CALL and GUIGNARD, all intelligent men, tried them extensively in South Carolina, and wrote me they did not suit their climate. These gentlemen are entitled to great praise for their exertions, in testing the quality of grapes for wine. I corres-

ponded with them for years. I believe Mr. GUIGNARD is the only survivor. At that time, we added sugar to our *must*. In that latitude, I should have supposed the grape would have had more of the saccharine principle, than in ours. To my surprise, Mr. M'CALL wrote me that he put 30 ounces to the gallon; and in one case, where he put 26 $\frac{1}{2}$ ounces, found it not sufficient. Messrs. GUIGNARD and HERBEMONT used less, but more than was customary here; and Mr. HERBEMONT complained to me that his wine often turned to vinegar.

The *Ohio* grape I tried for wine one year, and did not admire it. I was equally unsuccessful with the *Lenoir*. I made from it a white wine. It is said to make a good red wine. The *Missouri* makes a good wine, resembling Madeira. I follow the custom in Madeira, and add brandy to this wine.

Many contend that the *Lenoir* and *Herbemont* are the same. My tenant, S. W. WRATTON, who has cultivated them both extensively for ten years, has this opinion. Their fruit much resembles each other. The *Herbemont* I prefer. The *Lenoir* is of more vigorous growth. The *Herbemont* has a different colored wood: its wood is dark-colored; the *Lenoir*, light-colored, with a light blue cast. The terminal leaves of the *Herbemont* have a red or brownish cast; the *Lenoir*, green. Both are hardy, and subject to rot: both are fine table grapes, and the *Herbemont* makes a fine wine.

The *Missouri* is, for the table, about equal to the *Miller's Burgundy*, which it resembles. The *Ohio* is a fine table grape. All are hardy, and free from the hard pulp common to most of our native grapes. The *Lenoir* is generally more compact in the bunch, than either of the others. The *Ohio* bears the largest bunch of grapes: it requires to have the bearing wood left long, and a plenty of sun and air.

4 Q. Can you give the origin of the *Ohio* and other native grapes?

A. The origin of the *Catawba*, *Herbemont*, *Ohio*, *Lenoir* and *Missouri*, will soon be an object of interest. Strange as it may appear, no certain account can be obtained of either. The *Catawba* was found by Mr.

ADLUM, in the garden of a German near Washington city; where obtained from, he knew not. It is certainly a native; and it is said that one exactly similar was found near a town in Pennsylvania, which they named after the town: the name I do not recollect. The leaf, the stem, the aroma, proves it of the *Fox* family. I have had native grapes sent me from different points, almost exactly similar; but the wood is of less luxuriant growth, the bunches and fruit not quite as large, and not as abundant leaves. Where seedlings are raised from this grape, they evince a disposition, not to improve, but to go back to the type — the parent *Fox*. We have raised some white grapes from the seed. I have seen no seedlings equal to the parent.

It appears Mr. ADLUM had a proper appreciation of the value of the *Catawba* grape. In a letter to me, he remarks, "In bringing this grape into public notice, I have rendered my country a greater service, than I would have done, had I paid the national debt." I concur in his opinion.

The *Lenoir*, Mr. GUIGNARD wrote me, was a native grape of Sumner county, in South Carolina. Mr. HERBEMONT thought that the *Lenoir* was believed not to be a native of Carolina, but to have been raised from a seed of a foreign grape, by a person of the name of *Lenoir*, near Statesbury, South Carolina.

The *Herbemont* was originally supposed by M'CALL, HERBEMONT and GUIGNARD, to be a native of South Carolina, from its hardy character, and the resemblance of the plant to some of their wild grapes. They were compelled to abandon this belief, and to consider it a foreign grape of the *Pineau* [*Burgundy*] family. For the grape was first got from the garden of Gen. HUGER of South Carolina, where it was called an English grape, and was said to have been imported about the year 1797. Mr. M'CALL assured me that he imported the same grape from Madeira; and a French gentlemen, who imported what he supposed different grapes from France, declared they were all the *Herbemont*. This I doubt: a common observer would pronounce the *Herbemont*, *Lenoir* and *Ohio*, all the same grape, judging merely from the size of the berries.

The *Ohio* grape cuttings were sent me in a segar-box; by whom, or where from, I could never learn. Mr. AFFLECK, of Washington, Mississippi, writes me it is identical with their *Jack* grape, which he says was raised from the seed of a foreign grape, by a Spaniard or Portuguese of the name of *Jack*. Another correspondent writes me, its proper name is the *Jaquish* grape, from having been raised by a person of that name from seed. I received two plants of the same grape from Biloxi, Mississippi, where it is cultivated as a native grape; but the gentleman from whom I got it, says it is not the *Jack* grape. I hope soon to have the *Jack* grape, and be able to settle this point. The *Ohio* grape is of no value in the neighborhood of Eoston. [It also proves inferior to the *Elsingburgh* here, Ed.] It does not even succeed well out of our city: the reason I know not. Mr. PROSSELET, a French gentleman of Natchez, imported vines from France, which he states were identical with their *Jack* grape.

The *Missouri* I got from the elder PRINCE, as a native of Missouri, more than twenty-five years since. His son recently sent to me for cuttings of it. Here it is a delicate grower. In Newark, New-Jersey, in a poor soil, it grows very luxuriantly, and bears well, and is hardy.

5 Q. How much champagne wine did you make last spring? What addition is made to the pure juice? How much will you make next spring? At what price will it be sold, and when offered for sale?

A. I made about 6000 bottles last spring. The best of loaf sugar is the only article added to the wine. Where we make a dry sparkling wine, no addition is made. The wine is better, for having a portion of old wine added to the new. Another objection to making it wholly of new wine is, it is apt to break the bottle. It requires experience, to know what quantity of old wine can be safely added. We shall be compelled to throw 2000 bottles back into the cask, as too much old wine was added; and the consequence is, the wine has not sufficient life. Last season, the early promise of an abundant crop of grapes was truly flattering; but the rot came, and our vine-

yards did not average one-fifth of a crop. I expect to make 10,000 bottles next spring.

I saw it stated by a correspondent in the *National Intelligencer*, that there were "several manufactories in Cincinnati, for the manufacture of champagne wine, in charge of Frenchmen, obtained from France." This is an error. Mr. MILLER had some champagne wine made at his house in the vicinity of the town, last season, by one of our Germans. It was made, and drank in a few weeks after working. It was not calculated for keeping, or sending to a foreign market, though much admired by those who drank it. In a few weeks it formed a sediment, and in a few months lost all its life. He commenced the manufacture late in the spring, at the time when my wine cooper deemed it too late to continue the manufacture; and used fire heat, to bring it into its effervescing state. My manufacturer keeps it in a cold arched cellar, and continues for near a year to draw off the sediment, and does not deem it fit for use till it has been a year in the bottle. The same German, this summer, commenced making, for Mr. MILLER, 40,000 bottles; got in a passion, and left the whole on the cellar floor. This wine was in great demand at our coffee houses.

Mr. MILLER has a fine vineyard, and understands the cultivation of the grape, and the manufacture of natural wine from them. Mr. SELVES, this season, employed an Englishman to manufacture champagne wine for him, for sale at his coffee house, who for years was engaged in the same business in London. It is fit for use in a few weeks after bottled, and is deemed a fine champagne by our wine drinkers.

My wine cooper is a Frenchman, bred to the business (as he says) in Champagne; and who, for the last few years, has resided in the city of New-York, and been exclusively engaged in the *resuscitation* of imported champagne, by the importing houses. His skill is yet to be proved.

One thing is certain: If a pleasant champagne can be made from our *Catawba* grape in two or three weeks, a good one can be made, by a skilful wine cooper, after a year's attention to the bottles. Whether the one I now have is skilful, time will

decide. The person I obtained from France in 1845, was drowned in the Ohio a few days after his arrival.

My own impression is, that in skilful hands, our *Catawba* will make a wine, superior in aroma and flavor to the best French champagne imported; or that manufactured in London, from *perry*; or, in New-Jersey, from *cider*, or *green corn*. The aroma of the *Catawba* grape continues in the wine, in all its stages. Our Germans did not at first like this peculiar muscadine aroma and flavor, but now give our dry *Catawba* wines a decided preference over the wines of Germany. In the fermentation of most wines, the aroma of the fruit is lost in the fermentation of the must, and a new flavor given: often an artificial one is designedly added; and so fond do we become of particular flavors, from long habit, that many of our winebibbers are delighted with the skin-taste acquired by the wine by being carried in fœtid goatskins.

My wines will be ready for use in the spring, and for sending abroad in March. It would soon lose its good name, should it ever obtain one, if sold below the price of imported French champagne. We judge of the value of an article from its cost. Mr. MILLER and Mr. SELVES sell their wine at twelve dollars per dozen (bottles returned), and, at this price, have found a ready sale. If my wine does not compare with the best imported, after giving the manufacture a fair trial, I shall discontinue it. Persons having it for sale, will be instructed to pay back the money on return of the wine, after the person has tried it, if dissatisfied; or if any bottles in a basket be found not good, to return the price for all that do not prove of the first quality. I calculate all will be good, or none; but a chance cork, though rarely, may destroy the wine.

I made the first champagne five years since. It was in part produced by chance, and induced me to erect a building for its manufacture, and to send to France for a manufacturer. I shall be content if we can always make as fine a wine by design, as was then made by accident.

6 Q. What, in your opinion, is the cause of the rot in the grape?

A. The general answer to this question will be, much rain in the heat of summer. I believe this, as much as I believe the blight in the pear tree is occasioned by the atmosphere. For the first century after the pear tree was common in the United States, we had no blight; yet we then had similar weather, to what we have had since the blight made its appearance. It is of late years, only, that the rot has been so destructive among our grapes. For years, the blight has given us but little trouble, and the yellows in the peach trees has disappeared. One thing is certain, if we had little or no rain, after the grapes are fairly forward, we should see but little of the rot. Certain it is, it is continued rains, followed

by a hot sun, that causes us to look out for the appearance of the rot. If an insect be the cause, may not rain and a hot sun bring them to life?

I will name a circumstance at the vintage of 1846, at my vineyard, under the charge of Mr. MYERS, a skilful vinedresser, which he pointed out to me. He expected to make 2000 gallons of wine: the rot came, and he made 35 gallons only. He noticed no worms in his grapes or about them. As soon as the *must* was deposited in the tub, he saw a white scum over it. He took it off, and in quantity it was more than one quart. He found it to consist of white worms, so small as scarcely to be discerned by the naked eye. N. LONGWORTH.

EXPERIMENT ON A DISEASED PEACH TREE.

BY T. A. S., SYRACUSE, N. Y.

IN the fall of 1844, Judge G. L. of this village procured a few peach trees from New-Jersey, which were planted in his garden the spring following. During the seasons of 1845, '46 they grew well, and all appeared equally healthy. Last spring they came finely into bloom and leaf; but one of the number, soon after the fruit had set, manifested derangement in some of its vital functions; the leaves becoming yellow and drooping—presenting an appearance more indicative of the autumnal than the vernal season. The change was somewhat sudden; and the malady, whatever it was, appeared to be making rapid strides. Nurserymen, amateurs and others, were called in to examine the tree, some of whom pronounced it to be affected with the “yellows,” and recommended its extermination lest the other trees might imbibe the contagion.

At this stage, the tree was passed over to my hands for “experiment.” The report of M. BRONGNIART on the action of the salts

of *iron* on vegetation, (contained in your journal for April last,) suggested the use of that metal in some form. As the readiest means, resort was had to the oxide; a small furnace near by furnishing this material in abundance from the filings of the finishing room, which having been thrown out and exposed to the action of the atmosphere, had become a mass of *red rust*.

The earth was removed from the tree (about the trunk) down to the main roots, over a circle about a foot in diameter, and a peck measure or more of this oxidized mass placed around the tree and immediately in contact with the roots thus exposed. A pail of water was then poured over the material, and the earth replaced.

About the 4th or 5th day after the application, a perceptible change had taken place along the main arteries of the leaves, which had assumed a deep, healthful green, the partial and distinct change giving to the foliage a singularly variegated appearance. From this period the alteration was marked

and rapid, till at the end of ten or twelve days the tree had apparently quite assumed its natural or normal condition. On examination, however, it was found that the young fruit had become injured, and had remained nearly stationary in size, presenting much the appearance of the *cast* fruit of the peach, of a lifeless texture and drab colour. The tree, however, retained its fruit during the season, though its growth was scarcely perceptible from week to week until after the middle of September, when the *stoning* process had probably become partially perfected; after which period the fruit swelled off somewhat rapidly until the latter part of October, when it was checked by the frost; some few specimens became slightly coloured, but all immature and worthless. The tree, however, had made a fair growth of wood for the season, appears well stocked with fruit buds, and retained its foliage some weeks longer, and in a fresher condition, than other peach trees planted in the same grounds.

I send you the foregoing facts, to be made such use of as you may think proper. Perhaps they may suggest a remedy for the "yellows" in the peach tree—a malady with which I am unacquainted, unless this case has afforded an instance of it. Your

large experience and more extensive knowledge on such subjects may be able to ascertain the nature of the disease, and the effect or action of the remedy applied.

Yours, &c., T. A. S.

Syracuse, N. Y., Dec. 6, 1847.

.....

[We are obliged to T. A. S. for the foregoing account of his experiment. It is interesting, as corroborating M. GRIS' views of the beneficial action of iron on the health of diseased foliage. We have ourselves repeated this season some of M. GRIS' experiments with sulphate of iron (copperas) with excellent results; and there is little doubt that almost all diseases of the foliage (including the "yellows" in the peach,) if taken at an early stage, may be cured by its use—following the proportions laid down by that writer in our last volume, p. 471.

Our correspondent administered a pretty large dose of oxide of iron to his patient; though from its being kept in a small circle near the trunk it does not appear to have produced, as yet, any bad effects. The fruit was probably injured past recovery by the diseased state of the sap before he made his application of iron. We shall be glad to have any accounts from T. A. S. or others of further experiments. ED.]

A VISIT TO THE JARDIN DES PLANTES AT PARIS—NO. II.

BY S. B. PARSONS, FLUSHING, L. I.

WARNED by our failure at the previous visit to obtain admission to the greenhouses and conservatories of the garden, we took the precaution to send a note to M. MIRBEL, the Professor of Culture, who politely sent us a ticket of admission to every part of the establishment.

Our route now took us by the flower

market, and numerous small shops, where bouquets of varied beauty and price greet the eye. Entering the garden, we first visited the *Orangerie*, which was now mostly filled with large specimens of greenhouse plants. The light was admitted only by upright sashes in front, and by occasional skylights in the roof. We noticed here a

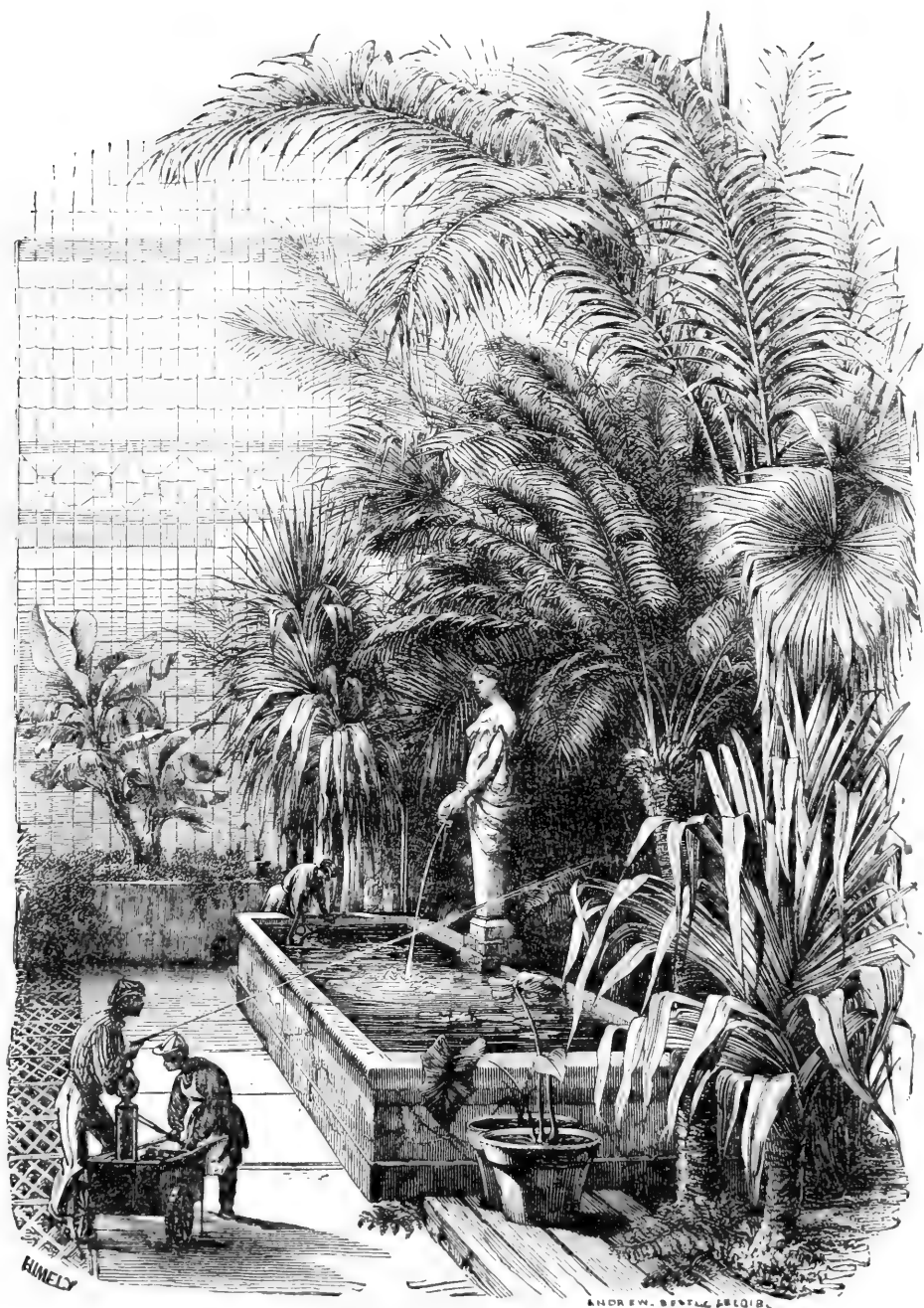


Fig. 40.—Interior View of a Hot-house in the Jardin des Plantes.

very large and beautiful specimen of *Araucaria excelsa*, plants of the *Banksia præmorsa* or New-Holland orange, *Palme de Sicile*, a *Pinus longifolia* 10 feet high, *Araucaria brasiliensis* 12 feet, *Araucaria imbricata* 30 feet, *Eugenia myrtifolia* from New-Holland, *Metrosideros floribunda*, *Pinus casuarina*, an Orange tree 20 feet high, with a trunk 6 inches in diameter; with a variety of Acacias and other plants. The boxes and pots were kept very clean, but there was not that systematic mode of arrangement which might have been expected.

We next visited the hothouse for tropical plants, which is about 50 feet high. Here were some fine specimens of the *Banana*, the *Brownia grandiceps* (a large variety of Palms,) *Arenga saccharifera* 30 feet high, *Gastonia palmata* (a plant from the East Indies, with a curious hand-shaped leaf,) *Areca rubra* with leaves 6 feet long, a *Cactus* 40 feet high, and *Bambusa arundinosa* 45 feet high.

Immediately opposite this house, and on the other side of a main walk, was another house of the same form, in which we noticed the *Begonia incarnata* with a beautiful flower, *Begonia muricata*, *Arum cordifolium*, *Acacia arborea*, *Ternstræmia*, very large Camellias, and the *Klemia hawortii*, a very curious plant. Immediately over these, and in a sort of gallery, was a collection of smaller plants, among which we noticed the *Begonia peponifolia* from Mexico, bearing clusters of white flowers, with a glossy leaf 22 inches in diameter.

These houses were both warmed with hot water, and, although containing many rare plants, did not present at that season a very splendid appearance. In one of them was a statue of a woman, pouring, from a pitcher in her hand, a constant stream of water into a basin below, which furnished a supply of tempered water for the plants. Both houses

were of an imposing style of architecture, totally differing from any horticultural buildings we saw elsewhere.

The library and galleries next claimed our attention. The former is composed of works on every branch of natural history, to the number of some 30,000. The most interesting of its contents, are the manuscripts, with original designs and beautiful paintings of fruit and flowers upon vellum. These number some 6000, and are valued at two millions of francs. Among the professors attached to the library in the latter part of the 18th century, were the brothers REDOUTE. One of these, known for his works on the Lily and the Rose, was a very beautiful and correct painter of flowers. This idea of having a painter for the most beautiful flowers and curious plants of the field and garden, belonged to GASTON of Orleans, the proprietor of the garden of Blois, and the first prince of the blood who pursued horticulture with the zeal of a servant, and with royal expenditure. In his garden, the office of painter was made quite as important as that of gardener in chief. His painter of flowers was named ROBERT, a laborious and exact artist, whose collection of paintings on vellum was bought by COLBERT for the King, on the death of GASTON in 1660. In the steps of ROBERT followed VANSPEËNDONCK, unequalled in coloring, but often wanting exactness. REDOUTE's paintings seem to combine the excellencies of both the others, escaping their faults. He is said to have studied plants as a surgeon studies the nerves, tendons and arteries of a human body; and nearly all his time was spent in the garden in summer, and in the greenhouse in winter. His lectures are said to have been crowded with all the beauty and grace of Paris, who came to learn some of the simple mysteries which surround the formation of a perfect flower.

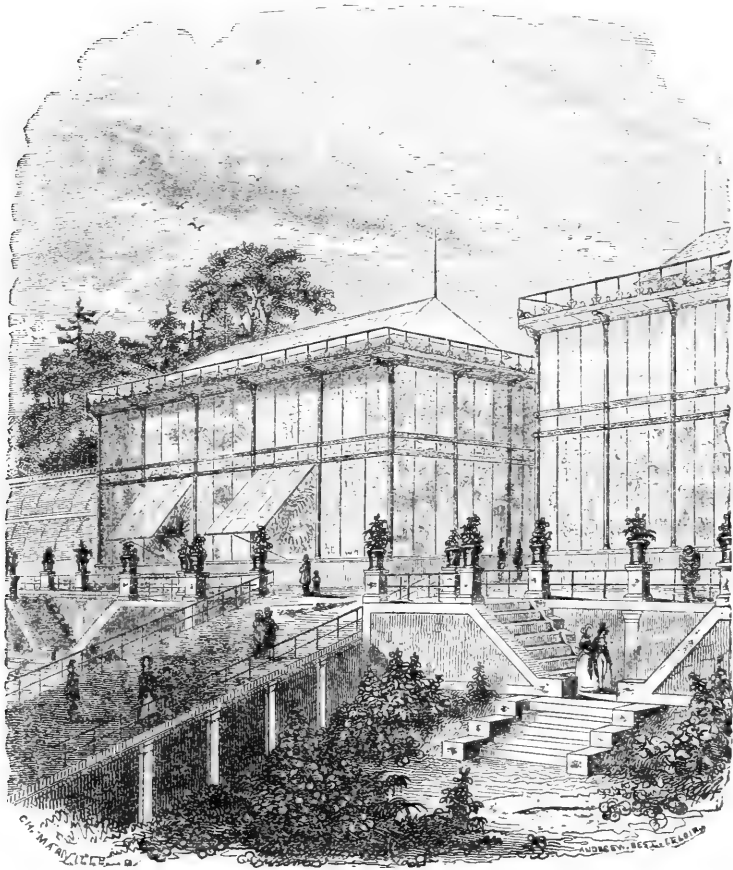


Fig. 41.—*Outside View of the Hot-houses in the Jardin des Plantes.*

When lecturing upon this great branch of natural history, of which he was the Titian and the Raphael, he is said to have been very eloquent, and to have displayed in glowing colors every detail in the delicate anatomy of plants.

To the labors of REDOUTE are thus owing a large part of the valuable collection of paintings in the library of the Garden of Plants. The Museum of Natural History, with all its galleries, is perhaps the most complete existing, and open to the public with a liberality which might well be copied

by other nations. The most rare and valuable specimens, and very complete catalogues, are at the disposal of the visitor or student, of whatever nation he may be; and many of our own countrymen have been indebted to French liberality, for advantages which could not be obtained at home.

There is not a little truth in the boasting remarks of a French writer, that "it is France that is great and generous. She knows not that narrow egotism which locks up useless wealth, and which denies the light to those who come to read at her

lamp. She comprehends the true fraternity of nations, and perceives that science is neither to be restrained by man nor limited to empires. Here, in the dominions of nature, she looks at the rights and needs of humanity together, and deems it a crime to deny a free communication of those treasures of science which may prove useful to the human race."

The Gallery of Zoology occupies a building nearly 100 feet in length, and three stories high. The third story contains the collection of mammalia, about 1500 specimens. The second contains the birds, of which there are nearly 6000 specimens, all beautifully prepared, and presenting a brilliant show of graceful shapes and gorgeous plumage. An ornithologist would here lose all recollection of the external world. On the first floor is perhaps the richest collection of reptiles existing, mostly preserved in spirits of wine, and including tortoises, frogs, &c.: of these there are nearly 2000 specimens. The collection of fishes comprises about 5000 specimens, either preserved in spirits of wine, or their skins dried, stuffed and varnished. By this last mode the colors are retained remarkably well, and give a better opportunity for inspection than when preserved in spirits of wine. When residing in the tropics some few years ago, we were frequently struck with admiration of the brilliant and gorgeous colors of the fishes of that region. A friend, some time after our return, kindly sent us a collection of the finest, prepared in this manner, with their skins dried and stuffed; and they are now in perfect condition.

The entomological collection numbers about 25,000 specimens; and there is a very beautiful collection of shells, corals, sponges, &c.

The whole number of specimens in this building is said to be 150,000; and the

arrangement is very perfect, exhibiting every stage of animal organization from the sponge to man.

The Cabinet of Comparative Anatomy occupies another building, and was prepared and arranged under the direction of CUVIER. In one room are skeletons of various marine mammalia; in another are skeletons of the human frame, mummies, dwarfs, skulls, &c. In another are detached bones, for the purpose of study; and others contain every variety of animal organization, bones, muscles, &c. A collection of brains and eyes is contained in phials, as also the bones of the ears of all animals. In a glass case, we noticed a model in wax, of the hen; exhibiting the several stages of formation of the egg, and the internal organs. In one room is a collection of skulls and casts of distinguished characters, very attractive to the phrenologist. There are hundreds of other things which want of time and space will not permit us to mention here, but which were highly interesting.

The largest and finest building is devoted to the galleries of mineralogy and geology, and the botanical collection. It is nearly 500 feet long, 40 wide, and two stories high, resembling in appearance a large cathedral. Here we found fragments of mountains, specimens of various soils, minerals taken from the lowest parts of the earth, specimens of the various strata, and mammiferous fossil remains. On specimens of rocks are shown the gigantic footsteps of animals which no longer exist, and other objects of interest, which present to an intelligent mind not merely a resting place for the eye, or a pleasant occupation for an idle hour, but indubitable evidence that, amid all our knowledge of the past, and the vast progress in science and art which the last few years have seen, man is still but on the threshold of knowledge; and the

little that he is permitted to see, is but to convince him of his own ignorance, and the minute detail and inconceivable vastness of the creation.

The Botanical Gallery is very interesting, and contains some 350,000 dried specimens. Those from New-Holland, the Cape, India, Egypt, &c., are arranged by themselves; as are also those of Michaux, De Candolle, Humboldt, Tournefort and others. In one part is a very large collection of every variety of wood, with specimens of the roots, bark, epidermis, &c. There is a large collection of fruits preserved in spirits of wine, and another of fruits from all climates in wax and plaster: these last were well executed and colored, and to us exceedingly interesting. There is a large collection of seeds, drugs, and fossil plants. The woods, fruits and grains number some 4500 specimens.

Many of the specimens in these various galleries have been collected during the present century, but a large portion of them existed previous to the Revolution. Amid the insanity which then seemed to characterise the French people, and their absolute hatred of every thing bearing the scent of royalty, it is somewhat remarkable that the Jardin du Roi, as it was then called, should have escaped destruction. The people wished to have, however, entire control of it, but were opposed by BERNARDIN DE ST. PIERRE, who was then director of the garden. To their threats, he replied that it had been confided to him by the King, and he would be faithful to his trust. The people returned that they were the rulers, and that nothing should prevent their enjoying their own trees, plucking their own flowers, eating their own fruit, and roasting their own pheasants and partridges. This was reasoning unanswerable; BERNARDIN DE ST. PIERRE replied by inviting the citizens of

the faubourg to mount guard in the garden, with musket and bayonet. To reward his zeal, his office was suppressed, and he was obliged to retire from the city. That he escaped the guillotine, and the garden destruction, was surprising, but was owing, doubtless, to one of those impulses of the mob, which induced them to save the beautiful lindens at Lyons. The story goes that they were about cutting down these lindens, when there appeared before the proconsuls an old woman of the city, who stated to these levellers, how, for the last fifty years, she had daily walked under the shade of those old trees; that they had seen her birthday, and she did not wish to see them die. They listened favorably to the old woman, and granted her petition, and thus were saved some of the finest old lindens that can be found in France.

There were few things in our rambles through Europe, that afforded us more pleasure than our visits to the Jardin des Plantes, and promenades through its shaded avenues, and among flowers from every climate.

It is not only here that the French government has shown its zeal for horticulture, but it has also botanical and experimental gardens at Montpellier, Toulon and Algiers, to which plants from every quarter of the world are sent for acclimation. It may safely be assumed that this plan is of incalculable benefit to their agricultural industry, and that similar establishments would be of vast benefit to our own country, extended as is its agriculture beyond that of any other nation.

We need here two large botanic gardens, one at the North, and one in Florida. Into the latter could be introduced all plants or products that promise to be useful, and, after being acclimated there, could, if their nature would permit, be sent to the Northern Garden, and by the side of other products

from more temperate climates, exhibit their adaptation — if there exist any — to the development of the industry and wealth of our people. It is doubtless within the memory of many, that the cotton plant was scarcely known in this country, and its introduction or general cultivation deemed the wild project of some enthusiast; yet what is cotton now, less than one of our most important staples, and an article the growth of which we almost entirely monopolize. Such has been the wealth we have derived from one foreign plant. Are there no others that can be profitably cultivated here? Part of our country is within the tropics; and the banana, with other tropical fruits, can be ripened in Florida. Is it well

ascertained that the tea plant, the coffee tree, the cocoa, the various spices, the caoutchouc, the Manilla hemp, and various other articles of eastern produce, cannot be also profitably cultivated in our Southern States? This is a prolific subject, and pages might be written to prove the great benefit to be derived from gardens of acclimatation. It is scarcely adapted, however, to the limits of an article like this; and we can only express our hope that Congress will not delay to act in this matter, and to give our agricultural and horticultural industry a measure of the benefits and encouragements which are bestowed upon it by all the principal European powers. S. B. P.

Flushing, Dec. 7, 1847.

LEECH'S KINGSESSING PEAR.

BY DR. W. D. BRINCKLE, PHILADELPHIA.

THIS fine new pear is a natural seedling, which sprung up in the family burial ground of Mr. ISAAC LEECH, in Kingessing township, about four miles from Philadelphia. The tree is about fifteen years old, and has been in bearing four or five years. I did not become aware of its existence until this summer; and as it was nameless, I gave to it the name at the head of this article, in honor of the township where it originated, and the owner of the ground on which it grew. From the close resemblance of the fruit to that of the *Chapman*, it is probably a seedling of that variety, or of its parent the *Petre*. It is larger, however, than either of those kinds; and from the former, it differs essentially in being very buttery. The original trees of the *Chapman* and *Petre* are less than a mile from the *Kingessing*.

The *tree* is somewhat thorny, and of upright and vigorous growth. The *wood* on

the young thrifty shoots, is of a light yellowish green, becoming brownish olive, sprinkled with numerous gray dots; *leaf* rather large, of a bright shining green, with superficial curvilinear serratures; *petiole* long, and of a pale yellowish colour, as is also the midrib.

Fruit three inches long, and two and a half in breadth; *form* obovate, and sometimes obtuse pyriform; *colour* sea-green, covered with patches of dark green; *stem* one inch long, rather stout and somewhat fleshy at its lower termination, which is inserted usually into a flat surface, and sometimes into a slight depression; *calyx* small, in a very shallow basin; *flesh* rich, buttery, and delicately flavored. Ripe, last of August. W. D. B.

Philadelphia, Nov. 18, 1847.

[We are gratified to publish, for the first time, the foregoing account of a fine new Pennsylvania Pear.

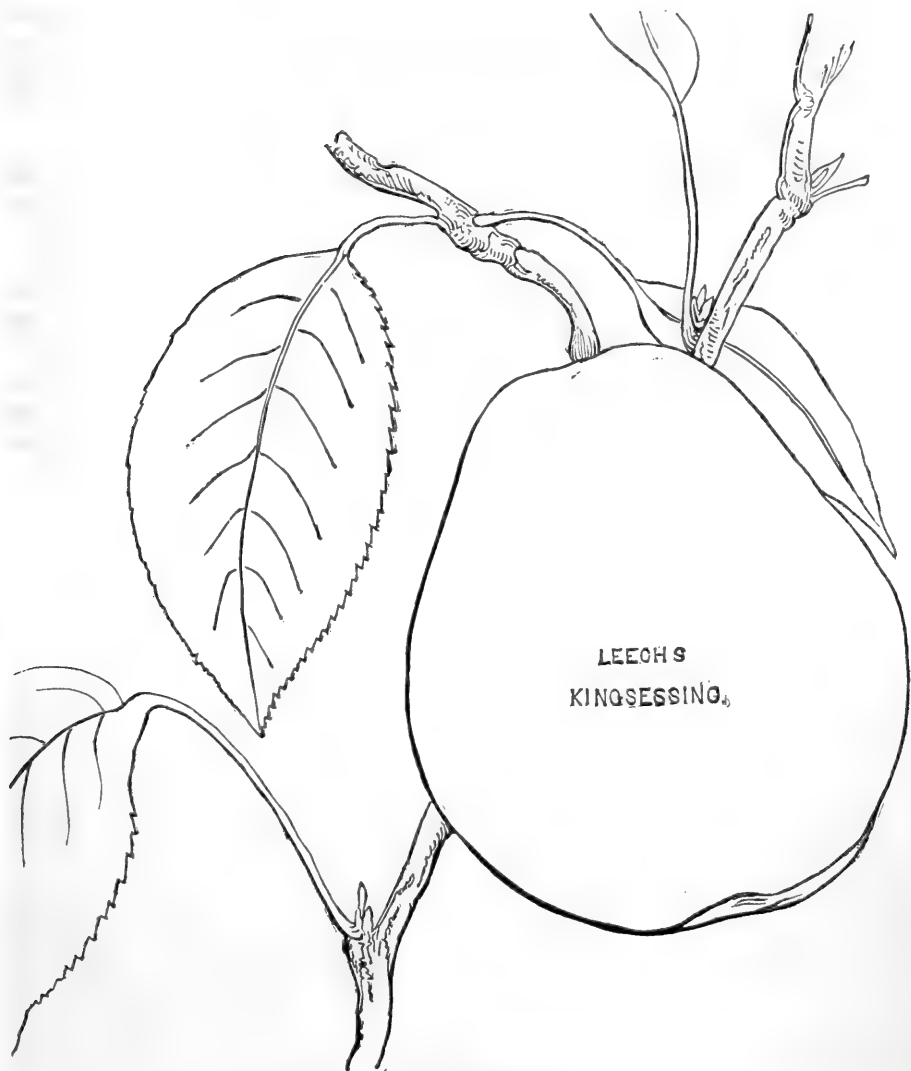


Fig. 42.—*Leech's Kingessing Pear.*

This is the first fruit named and described since the adoption of the **RULES OF AMERICAN POMOLOGY**, by our leading Horticultural Societies. The Fruit Committee of the Pennsylvania Society (see report in last No. p. 295,) having decided that it is "a new seedling pear of high merit;" and

Dr. BRINCKLE, who is a competent pomologist, having described it as a rich and excellent variety, cultivators may consider it a sort worthy of trial in all parts of the country. Our own opinion has already been strongly given in favor of *native* varieties of the Pear. ED.]

DESIGN FOR A SUBURBAN VILLA.

OUR FRONTISPIECE represents the elevation and plan of a suburban villa of moderate size, in the Gothic style. It is a design by E. B. LAMB, Esq., an English rural architect of ability, which we borrow with slight modifications from Mr. LOUDON's *Supplement*.

In the plan of the principal floor, fig. *a*, is the porch; *b*, the hall; *c, c*, corridor; *d*, lobby to staircase; *e*, staircase; *f*, dining room; *g*, drawing room; *h*, library; *k*, open arcade; *l*, landing and steps down to the grounds; *m, m*, areas; *n, n*, sunk story, or sloped ground, (concealed by belts of shrubs,) to give light to the basement. The entrance front is at *a*, the side of the building opposite to that shown in the elevation. The kitchen and other offices are in the basement; and the second, or chamber story, contains six bedrooms.

The simple elegance and symmetrical proportions of this design, will please most persons at a glance. It appears to us that the arrangement of the central portion of the ground plan might be improved; and we think both exterior and interior effect would be increased by removing the chimneys and fireplaces from the *outside* walls, and placing them on the inside walls of the two largest rooms *f* and *g*; that is to say, on the sides of the rooms exactly *opposite* where

they now stand. This would be retaining all the heat of the flues in the body of the house; and it would bring out the two stacks of chimneys at the top or ridge of the roof, which now emerge rather awkwardly at its eaves or lowest portion.

A villa in this style, as we have before remarked, should never be built of wood, but always of stone, brick painted some agreeable neutral tint, or rough brick and cement. The general character of the building is by no means ornate; and the ornament, where it appears, is properly introduced; that is to say, by raising the character of important features, such as doors and windows. The tracery in the windows is florid and handsome; and this and the mullions should be of carved wood, painted and sanded to resemble stone. The effect of the design would be less rich, but we think not less satisfactory, if window heads of the same form, and a less ornate pattern of tracery, were introduced.

The general appearance of the opposite or entrance front of this villa, is much like that of the front shown in the elevation here given; except that instead of the arcade, the porch would be the prominent feature of the first story.

ON THE FIRE BLIGHT IN PEAR TREES.

BY A. H. ERNST, CINCINNATI, O.

DEAR SIR—The numerous theories and speculations on the *Fire Blight in the Pear tree*, and its mode of operating, have so often been brought before the public, sometimes by our ablest and closest observers in horticultural economy, that it is with re-

luctance I enter the field of controversy. This I do rather as a duty than a choice, and it is with due respect for the views and opinions of those who have travelled in the path of this mysterious agent to discover a remedy, that I dissent from their views.

The most prominent and generally received of these theories are, first, "*The Insect Blight*;" second, "*The Frozen Sap Blight*."

The first was brought to notice by the Hon. JOHN LOWELL, of Boston, in 1836, by the supposed discovery of the mischievous insect. (*Fruits and Fruit Trees of America*, page 322.) The second by yourself, (*Ibid*, page 324,) Rev. H. W. BEECHER, and others.

To the first of these views, a ready assent was yielded, out of respect to the high source from which it emanated. It thus for a time became the popular doctrine. On more mature reflection and observation, it is, however, evident that the "*Scolytus pyri*," which he saw on the diseased limbs of the trees, were attracted there by the existence of the disease, and were not its cause. This idea is, therefore, mostly abandoned, and the second, "*The Frozen Sap Blight*" theory, adopted. This, to a limited extent, explains the evil fully. But it is by no means the principal agent in the work of destruction. Its appearances are so very fully described in your *Book of Fruits*, page 324, that it is unnecessary to repeat it here.

There never was a more favorable year to test its correctness—one which forebode more destruction to the Pear tree, than the last. It will be remembered that the latter part of the summer of last year (1846) was peculiar for its continued invigorating showers, which set vegetation in active motion after it had almost come to a stand by a previous drouth. Moisture and growth continued until late in the fall, when it was suddenly brought to a check by freezing weather, so severe that the tops of the young Peach trees in the nursery were frozen, and many Cherry trees altogether destroyed. This was also the case with cer-

tain kinds of Pears in the nursery, as, for example, the *Washington* and the *Bloodgood*; of these I had each a row of fine stout trees, rebudded high on other sorts, and which had made fine growth and good heads. The bodies of these were almost all frozen to the ground, without seeming to have affected the tops, in most of them. While other sorts, such as the *Columbia*, *Golden Beurre of Bilboa*, *Bartlett*, &c., similarly treated and situated, alongside of the former, were unharmed. And yet there has been less Blight this summer than for many years. I have lost but one tree, with the exception of those above referred to, this summer, and that was from the effects of a previous year's injury, with which it still struggled.

On the supposition that the frost theory be the theory, how shall we account for its absence, under such favorable circumstances for its operation? There is no doubt that when late luxuriant growth, with the sap vessels full and extended, and an immature wood, is overtaken in this condition, by sudden freezing, it will have the effect of bursting the sap vessels and destroying the vitality of the immature wood; the effect of which may either be instant death to the whole tree, or mortality in part, just in proportion to its maturity and ability to resist the frost. And this will fully explain why its destructive effects are sometimes carried into the next summer. And, indeed, that at times, by a powerful effort of vegetation, it succeeds in apparently overcoming the mischief and throwing it off, still, however, leaving the tree an impaired constitution, with which to struggle out a brief existence.

It seems to me, then, we must look to a different agent as the cause, for what may be with us properly called the "*Fire Blight*." This I apprehend we shall find

in the *rays of the sun*, as hinted at by COXE, in his book on Fruits. All observation and experience goes to show that the month of June is the period of the year most prolific in the Blight. The reason of this is very obvious. It is the period when vegetation is in its most rapid and luxuriant growth. It is then, when nature seems fairly to have aroused from its slumbers, and to be in the full career of growth, that this growth is most tender and susceptible of injury. It is too, at this time, that the sun, as ascending to its meridian power, sends forth, between the showers, its strongest and most powerful rays. These are brought to bear with all their force, not unfrequently aided by the shower—drops of water suspended in the tree, forming so many lenses to operate on the sap in the tender branches, the effect of which is to *scald the sap*, burst their vessels, and produce precisely the same results that a scorching fire would, if applied to the limb. This, of course, produces instant death on that part of the branch or tree where the rays are brought to bear, and, of necessity, all above that point; and it will as certainly carry death below with the returning vitiated sap, (if the affected part be of considerable size) if this is not immediately amputated below the injury, or to where the vitiated sap has extended in its downward course.

It may be asked, if the sun theory be true, How is it that there has been so little Blight the past summer? This is owing to two causes; the first, no doubt, from a reduced material to operate on, previous summers having destroyed many of those most easily affected. I presume it is in vegetable as in animal life, some systems are more susceptible to the attacks of certain diseases than others. When death has removed all the former, although the cause

may continue to exist, it becomes inoperative for the want of material.

But the principal reason is, the remarkably and uniformly cool and mild state of the weather during the whole of the summer. The rays of the sun being much less powerful than is usual in this climate. This fact alone is sufficient to prove the agency of the sun in producing the Fire Blight. I have not at my command a record of the temperature of the last three or four summers, so destructive to the Pear tree, but I will venture to assert that it will be found, on examination, when this stood highest the Fire Blight prevailed most. I mean, of course, in the early part of summer, when vegetation is most active. It is true, the Fire Blight prevails more or less all over our country. It is also true that it decreases as we advance *north*, until it is scarcely known. I am credibly informed that along our northern border, especially in the neighborhood of Detroit, there are Pear trees as old as the first settlement of the country, of a hundred years planting or more. I have myself seen in northern districts, large collections of Pear trees where its ravages had never been felt. When we look at the immense collections of this fine fruit about Boston and Salem, the extent of their varieties, the success with which they are fruited, and continue to flourish in the highest perfection, we cannot but feel that the same cause or causes do not exist there for the destruction of this tree. There are some sorts introduced into our region which are constantly cut off by this destroyer. Out of more than two hundred sorts that I have imported and grafted on standards, within the last fifteen years, I have not succeeded in fruiting more than thirty or forty, and can not now number over one hundred sorts of this first grafting.

The following query may here also arise

in the minds of some—If it is the effect of the *sun*, how is it that so little has been known of it till within the last few years? This query is readily answered, by the fact that it is only within a few years that much attention has been paid to the introduction of considerable collections of this fruit, and as I have already remarked, without materials there can be no action. This, too, forms one of the strongest arguments in favor of my position. I do not however design to take up your time with arguments, but to submit the facts stated, to your consideration, and that of your readers, hoping that thereby more light may be elicited regarding this discouraging malady.

If the position I have assumed be correct, the remedies that suggest themselves are simple and within our reach. The first and most important, is the selection of a class of fine Pears, the growth and organization of whose wood is of a compact texture and slow of growth. Such are found to be least affected by the Blight. As, for example, the *Seckel*; of this I have scarcely known a tree destroyed. The second, is to select for our plantations the most *northern aspect* that can be commanded. The northern slopes of hills—the northern sides of buildings—the northern sides of fences, for espaliers, etc. If proper attention is paid to these suggestions, I feel confident we shall have less occasion to lament our disappointed expectations, and as a reward for our labors, we shall enjoy this fine fruit in perfection. And there certainly is no country in the world where the Pear can be more perfectly and easily grown, than this, if our trees are exempted from the destructive *Blight*.

I remain, respectfully yours,

A. H. ERNST.

Spring Garden, near Cincinnati, O., Dec. 1. 1847.

REMARKS.—We are obliged to Mr. ERNST for the foregoing interesting contribution to this still somewhat difficult subject. We have no doubt of his correctness in arguing that the “fire blight” is frequently caused by the heat of the sun in the early summer—that is to say, certain forms of the blight, and perhaps that most common in Ohio.

We are equally confident that in portions of the Western States, and in New-York, severe frost, under certain circumstances, is equally productive of this disease. And we are yet fully of opinion that the apple, pear and quince, are, in the ends of their shoots, liable to sudden blight and death from the attacks of an insect.

Another point is also entirely certain. Whether we examine the effects of the blight in the pear tree as caused by the heat of the sun’s rays, or by frosts, we are irresistibly led to the conclusion that the *bark of the pear tree is more tender than that of any other hardy fruit tree*; and that many varieties, of foreign origin, are more delicate in this respect, than others of indigenous growth.

Hence, as our correspondent remarks, it is not unusual to find old trees of very large size, in various parts of the country, which have never been in the slightest degree affected by any form of blight.

It is evident, that if the more delicate kinds of pears are to be cultivated extensively in districts liable to the blight, either the bark must be protected from the action of the elements, or the constitutional susceptibility to injury must be changed, if possible, by some mode of culture not yet satisfactorily ascertained.

MR. ERNST states that this season has been rather less marked by blight than usual, in Ohio. It has, likewise, scarcely made its appearance with us, but we learn from friends about Albany, that its ravages

have been unusually extensive and fatal there. It will perhaps tend to corroborate Mr. ERNST's theory, if we add, that we learn that the worst month, July, in that city, was marked by slight showers and very hot sunshine.—ED.

ON RAISING PEAR STOCKS.

BY JAMES WILSON, ALBANY, N. Y.

DEAR SIR—I was glad to see in the December number of the Horticulturist, Mr. NELSON's article on raising pear stocks from seed. If he has found a way by which we can supply ourselves with pear stocks, without being under the necessity of importing them, I for one will subscribe my quota toward awarding him some token of the obligations of nurseymen, for his important discovery.

If the throwing out by the frost the first winter, was the only difficulty we had to contend with here, that could be easily obviated, as the taking of them up in the fall, and *laying them in by the heels* deep, in some dry, sheltered place, or in a cellar, and planting them out in the spring, would not occupy much more time than taking up and transplanting them when the seedlings have four leaves. If dry, warm weather should prevail at the time when the seedlings are in a fit state to transplant, it would be rather difficult to succeed on a large scale. A few might be managed very well, as they may be planted in the morning or evening, and immediately watered and shaded from the sun for a few days, till they begin to strike root.

But we have a worse enemy to contend with than Jack Frost, and I believe the same evil prevails all along the Hudson valley, from New-York even to Vermont, and also about Boston. It is a leaf *blight*, that strikes the young seedlings generally

about the end of August or first part of September. The beds of seedlings will appear to look fine and promising, and all at once the leaves, in spots of the bed, will begin to have brown spots on them. In a few days the leaves will begin to fall off, and the disease will, frequently in a few days, spread over the whole bed or beds. When once this blight gets fairly hold of the seedlings, my opinion is that they may as well be dug under at once, as nothing can then save them. They will often, if the autumn proves fine, make an effort toward a second growth, but it is a fruitless effort, as they will most invariably die the first winter, under any treatment; and those that may survive the winter, will seldom, if ever, do any good. *If we can keep our pear seedling stocks growing the first season, till the leaves fall by the frost, they then are safe.*

If Mr. NELSON's plan will insure a growing, healthy condition of the leaves, etc., till the frost takes them, the discovery is just what is wanted.

Perhaps by taking extra care in preparing the soil, by deep digging and extra manuring, we may be able to obtain this desirable end.

Last year my pear stocks were a good deal blighted; this year, very little. I have been in the habit of sowing in the fall. This year I have laid my pear seeds in sand, with the intention of not sowing

them until spring. I propose to prepare my ground with extra care, and not to sow them too soon, and try what effect this course will have. I have also found where the plants stood thinly, that they were less liable to take the blight. My experience, also, goes to corroborate your opinion, that the soil must be deep, and inclined to dampness, to insure success, under the most favorable culture.

Yours, respectfully,

JAS. WILSON.

Albany, December 3, 1847.

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We trust Mr. WILSON, who is a thorough practical cultivator, will try Mr. NELSON'S

mode, and give us a report. We have examined the leaf-blight of which he writes, and which is in many places fatal to seedling pears the first year. Mr. W. does not undervalue the importance of maintaining the healthy functions of the leaf in growing these seedlings, and we suggest to him and other nurserymen, in order to remedy this evil, to water the seedlings, as soon as the first symptoms of a decline in the foliage is visible, with the solution of sulphate of iron (*copperas*) recommended by M. GRIS, (vol. 1: p. 471.) This substance certainly has the most decided and beneficial action on the health of foliage, and it seems not improbable that it may completely prevent the disease in question. Ed.

REVIEW.

THE ROSE: its History, Poetry, Culture and Classification. By S. B. PARSONS. 1 vol. 8vo. 280 pages. New-York, Wiley & Putnam.

AMONG the many stories of Roses in the East, is that of the philosopher ZEB, related by Madame DE LATOUR. "There was at Amadan, in Persia, an academy with the following rules: Its members must think much, write a little, and be as silent as possible. The learned ZEB, celebrated throughout all the East, hearing that there was a vacancy in the academy, endeavored to obtain it, but arrived, unfortunately, too late. The academy was annoyed, because it had given to power what belonged to merit; and the president, not knowing how to express a refusal without mortifying the assembly, caused a cup to be brought, which he filled so full of water, that a single drop more would have made it run over. The wise philosopher understood, by that emblem, that no place remained for him, and was retiring sadly, when he perceived a

rose petal at his feet. At that sight he took courage, seized the petal, and placed it so delicately on the water, that not a single drop escaped. At this ingenious allusion to the rules of the academy, the whole assembly clapped their hands, and the philosopher was admitted as a member."

Mr. PARSONS has been more ingenious and successful than the Persian philosopher. If there is any single subject in Horticulture, which, more than any other, had apparently been written and re-written about till there was not room left for a syllable more to be said, it is that of the Rose. English, French, German, and other continental writers, had written and engraved, sung and painted the Rose, until it appeared that the topic was quite exhausted. There are also two American treatises, specially devoted to this favorite flower. We therefore took up Mr. PARSONS'S volume, with the feeling that he must be a bold man, to go over this well

beaten track, with the hope and courage necessary to fill well a large octavo volume. But the Rose, like the female loveliness of which poets always delight to make it the emblem, is an inexhaustible subject. All the novelties of the botanist and the florist, all the gorgeous and rare flowers of the tropics, all the bright and lovely gems of eastern mandarin's gardens, and all the curious and brilliant blossoming plants of Mexico, have not been able for a moment to shake the six thousand years constancy of mankind to this queen of flowers. Nay, as if to prove the vainness of even the attempt to weaken the faith of her subjects, by bringing forward the novelties of strange lands, the Queen of flowers reproduces herself every year in a hundred new forms—new varieties, if possible, ten times more lovely, more deliciously fragrant, more perfect in form, and more refined in colour than of old ; so that her wondering devotees are forced, almost in spite of themselves, to bid adieu to the familiar types—the “old roses,” dear to the memory and the heart—and cultivate the new ones, so captivating are they to all the senses.

An examination of MR. PARSONS'S work has convinced us that he has been highly successful in the labor he undertook—evidently a labor of love. He has not laid a mere rose-leaf in the brimful cup : he has actually placed a whole bouquet in this vase so filled by his predecessors and contemporaries, whose previous contents seem to nourish and vivify it.

The volume before us looks at the Rose in every aspect. Its *history*, from the time of the “Ancient Coptic manuscripts,” down to the present day, with all the fables, mythological, scriptural and allegorical, that belong to it ; all the anecdotes of its magical charms and its wonderful influence, whether as the symbol of friendship between mighty

princes, or the badge of rival factions in cruel and bloody wars ; all the details of its luxurious use among the ancients, and the scent of the perfumes distilled from it, of the value of thousands at the present day ; and every thing touching its medical properties, and its employment in ceremonies and festivals. Then there are more than sixty pages of the “Poetry of the Rose ;” a collection of all the admirable odes, poems, sonnets, and lays of the numerous bards, who have delighted to lay the homage of the muse at the feet of this favorite of nature. After this, we have a chapter on the “General culture of the rose ;” and others on “Soil and planting,” “Pruning and training,” “Potting and forcing, propagation, multiplication by seed, and hybridizing :” the whole concluding with both a botanical and a garden *classification*, in which the finest varieties are described.

Altogether this may be considered the most agreeable and complete work on the Rose, in the English language. The author has not only collected and arranged all of most interest and value that has hitherto been written on this subject, but he has interwoven through the volume a good deal of interesting information, drawn from his own experience and observation, which has not before been given to the public. The volume is not simply a practical treatise for the rose cultivator, but a pleasant contribution to the library of the scholar, or the book-table of the lady's boudoir.

It is not a little curious to see how much more extravagant are the oriental nations in their fondness for roses, than ourselves ; though one might reasonably conclude, from an examination of the immense catalogues of some of our nurserymen, that we were almost beset with a *rose-mania*. We quote the following paragraph from page 139 :

“The Rose is to this day also extensively

cultivated in India, and for commercial purposes, perhaps in greater abundance than is now known in any other country. Bishop HEBER states that 'Ghazepoor is celebrated throughout India, for the wholesomeness of its air, and the beauty and extent of its rose gardens.' The rose fields, which occupy many hundred acres in the neighborhood, are described as, at the proper season, extremely beautiful. They are cultivated for distillation, and for making 'attar of roses.' He states, also, that 'many roses were growing in the garden of the Palace of Delhi, and the fountain pipes were carved with images of roses.' Another writer describes in glowing colours the beauty of Ghazepoor — the Gul-istan (rose-beds) of Bengal. 'In the spring of the year, an extent of many miles round the town presents to the eye a continual garden of roses, than which nothing can be more beautiful and fragrant. The sight is perfectly dazzling; the plain, as far as the eye can reach, extending in the same bespangled carpet of red and green. The breezes, too, are loaded with the sweet odor, which is wafted far across the river Ganges.' "

On looking over the "Garden classification," we are pleased to see that, in most instances, Mr. PARSONS's descriptions correspond exactly with our own notions. The following character given to the finest of the *Bourbon* roses, (the class destined, we

think, to give most satisfaction in this latitude,) we fully coincide with:

"*Souvenir de Malmaison* is altogether [all its merits considered] the most perfect and superb rose of this or any other class. It was originated by BELUZE, a Frenchman. Its flowers are cupped, and of very perfect form, very double, and with thick velvety petals: they are of the largest size, often four to five inches in diameter, and their colour a delicate blush, with a rich tint of cream. Its large and very luxuriant foliage, compact habit, and flowers of exceeding beauty, render this the very finest rose known." p. 250.

The volume contains colored plates of two of the new Roses which have elicited most admiration within the last three years, *La Reine* and *Chromatella*.

We pluck, from the wreath of poetical gems, which the author has collected together in this volume, the following, by that sweet English songstress, Mrs. HEMANS:

A THOUGHT OF THE ROSE.

How much of memory dwells within thy bloom,
Rose! ever wearing beauty for thy dower!
The bridal day — the festival — the tomb,—
Thou hast thy part in each, thou stateliest flower:
Therefore with thy soft breath come floating by
A thousand images of love and grief —
Dreams, filled with tokens of mortality;
Deep thoughts of all things beautiful and brief.
Not such thy spells o'er those that hailed thee first,
In the clear light of Eden's golden day!
There thy rich leaves to crimson glory burst,
Link'd with no dim remembrance of decay.
Rose! for the banquet gathered, and the bier!
Rose! colored now by human hope or pain;
Surely when death is not, nor change, nor fear,
Yet may we meet thee, joy's own flower, again.

THE APPLE CROP.—The inequality of the apple crop in different regions of country, the past season, is remarkable. In central Ohio, in the valley of the Hudson, and on the seaboard, the fruit has been more or less cut off; while in a large part of western New-York, it has not been so great for several years. A correspondent on Long Island states that in an orchard of twelve acres, he did not obtain half a bushel. Another correspondent in East-Greenwich

gives the following account of the singular circumstances attending its destruction in that part of Rhode-Island: "We had the most meagre prospect of apples I have known for years: the rosebugs in myriads attacked the scattering fruits while not larger than a nut, and from ten to twenty might be seen upon a single fruit. They prevailed chiefly on the seaboard; and fortunately a west wind drove them into the sea in quantities, forming a winrow on shore for miles." T.

FOREIGN NOTICES.

GLIMPSES AT ENGLISH COUNTRY PLACES.—[From a very interesting letter received since our last number, from a friend who has lately gone abroad to enjoy, among other things, the perfection of European parks and gardens, (and that too with abundant preparation for this species of enjoyment,) we extract the following portions, which cannot fail to interest our readers. Ed.]

I went out to *Skirving's nursery*, about three miles from Liverpool. He is a tenant of the Earl of Derby, whose place, "Knowsley Hall," is a few miles from there. Mr. SKIRVING has a nursery of 100 acres. There are forty miles of hedges—and such hedges and such walks—bordered by Rhododendron, Laurel, Portugal Laurel, and every species of evergreen shrub. The whole nursery is laid out in squares—of perhaps 50 to 100 feet square, surrounded by privet, thorn, laurel, beech or holly hedge, eight feet high, for protection of the plants within the hedges. I saw few *deciduous* trees; everything was *evergreen*. He has sixty-eight varieties of evergreen trees that will stand the climate of England. He showed me one patch of *Araucaria* (Chili pine,)* containing £2000 worth. This is the great tree here now; they are planting the avenues in the parks with them. I have as yet only seen specimens at Eaton Hall eight feet high; and I infinitely prefer the Deodar Cedar; one of the latter at Eaton Hall, about ten feet high, is most exquisite. Mr. SKIRVING had just sent off to the EARL OF HARDWICK, £400 worth of *Araucarias* and *Deodars* at only half a crown, 2s. 6d. sterling, a piece; something different from our orders to nurserymen. Skirving's house, formerly Walton manor, is 500 years old, and is completely covered with ivy, cut out for the windows, and abounding in hundreds of birds—singing and chattering so that you can hardly hear yourself talk. The birds are infinitely more numerous and tamer here than in America. There are beds and beds of Rhododendrons of every colour and all sizes, from 4 shillings per 100 to £10 a piece. So there were thousands of all the beautiful evergreen plants, which will scarcely thrive with us, and therefore most *tantalizing*. As I said before, I saw hardly any *deciduous* trees; and on expressing to him my wonder, he said the taste now was all for evergreens; and that the new parks were all evergreen trees and shrubs—so that in winter, when the proprietors chiefly reside there, the appearance may be the same as in summer. LORD HARRINGTON is even cutting down his *deciduous* trees and planting evergreens in avenues. One of these—an avenue of *Araucarias*—is seven miles long, one hundred feet broad, and the trees fifty feet apart: imagine the splendor one hundred years hence! Another of *Deodars* is three miles long.

[From our correspondent's account of *Eton Hall*, the seat of the Marquis of Westminster, we extract the following:.]

The income of the Marquis of Westminster is £416,000 per annum. He does not fancy Eton

Hall, and has been for two years altering the house and grounds; and the alterations will require two years more. We entered this estate by Grosvenor Lodge, a beautiful castellated building, and drove in a straight line eight miles, through an avenue of Hollies, Portugal Laurels, and our red dogwood—only about six or eight feet high—backed by trees perhaps twenty or thirty feet. This looked so new from the small size of the border, that I was disappointed. Passing another lodge, almost hidden in ivy, we drove through the park to the Hall. The latter was discoloured and moss grown, and the steps to the grand entrance grass grown. Hundreds of workmen were about the house and on the lawn, cutting up the latter in all directions, and converting what was lawn into terraces—taking up trees.

The whole of the space between the house and river—some twelve acres—is to be terraced; and each terrace is to be thrown into arabesques of flowers, vases, statues, etc. At an immense expense, all the trees remaining are to be trimmed and cut in the old style. In fact, it is to be a revival of the old *geometric* school in gardening on the side of the estate towards Wales. All the new evergreens are being planted at a great rate. I saw them planting some *Araucarias*. The hole for a tree three feet high was *ten feet across* and four feet deep. At the bottom were placed ten inches of stone as a drain; and the tree was planted in prepared soil on a hill, two feet at least above the level. The gardens—pleasure and vegetable—are sixty acres; the kitchen garden being seven acres. There is a great deal of wall; the gardens being in squares of, say an acre each. The glass houses were not better or more numerous than Col. Perkins' (near Boston,) and the grapes were certainly inferior to those I left at home, in size of bunch. There were a great many handsome *orchidaceous* plants, and an astonishing number of pine pits—perhaps 400 feet—filled with pine apples in every stage of forwardness. The pleasure-grounds consist chiefly of walks, bordered with Rhododendrons and all their evergreen plants—which, though beautiful as specimens, are uninteresting from sameness. One of the finest things on the estate is the bridge across the Dee—150 feet span, in a single arch, all iron, and exceedingly light and elegant, wrought in beautiful scrolls and arabesques. This, we were told, cost £15,000. It is this sort of thing that astonishes the Americans! There was one superb view from the west front towards one of the Welsh mountains; as high, perhaps, as Round Top (of the Catskills,) seen at the end of an avenue three miles long and one hundred feet broad, with very fine oaks on either side.

Eton Hall being comparatively new, I did not expect to see it so dark, moss-grown and stained. I fancied a light Portland stone tint; whereas, it is a sort of blackish brown, in streaks. They did not admit us, as they were tearing portions down for alterations. Yours, S. Chester, England, Oct. 30, 1847.

[* For a description of this tree, see vol. 1, p. 540. Ed.]

SEA-SIDE PLANTING.—It is generally allowed that it is a great difficulty to get trees and shrubs to grow, much less flourish, on many parts of the sea coast, so as to afford any degree of interest and satisfaction. But while we admit the difficulty, I am persuaded, with attention and care, their growth may be greatly promoted, as I propose to show from two cases that have come under my observation; one on the eastern, and the other on the western coast. The difficulty arises, it is thought, from the injurious effects of the sea spray falling upon the trees: this, in my opinion, is very doubtful. About ten years ago I was engaged to fix the site of a marine villa on the eastern coast, and to lay out the grounds. The ground is in general flat, with little variation. Between the edifice and the sea there is a space of about 160 yards; the flat extends about 120 yards to a point about 100 feet above the level of the sea; the rest forms a steep bank sloping rapidly down to the sands. The nature of the ground is very stiff, with a clay bottom, but well drained. Among others I arranged a plantation of trees and shrubs from the house down to the sands. It was planted in the usual way with trees from three to four years old, set about 4 feet apart. Two years after planting, half the trees at least were dead, and the rest had scarcely made any progress at all. The whole was replanted very thickly; the trees not being more than from one to two feet apart. I visited the place about three years afterwards, and found the better half living, but very little improved. The young shoots were mostly dead and the rest dying; but on my visit to the spot a few weeks ago, I found from the shelter the trees had afforded each other by being thickly planted, many of them had attained the height of twelve feet; such, for instance, as the Wych Elm, Willow, Sycamore, common Ash, and a solitary Occidental Plane which was well sheltered by other trees, the whole having made shoots this year from two to three feet long. The Turkey Oak, Larch, Lime, Mountain Ash, Horse Chestnut and Laburnum, had attained the height of from eight to ten feet. The Spruce and Balm of Gilead Firs were healthy, and making fine shoots. Such of the shrubs, also, both deciduous and evergreen, as had survived, are now thriving well; a manifest proof that the mischief the plants had previously sustained was more to be attributed to their exposure to the unbroken north and north-east winds than to the sea spray; for I found some of the trees, although within ten yards of the reach of the tide, growing very freely on some parts of the sloping bank, wherever the soil was moderately free, and they not so fully exposed to the violence of the winds; and at the same distance from the sea I observed Strawberries really flourishing, which I was informed had been planted five years, and had produced abundantly. I may also mention, as corroborative of my opinion, that the trees on the bank sloping down to the sea at Scarborough are thriving remarkably well wherever they are at all sheltered from sweeping winds. Since, then, it is evident that shelter is of the utmost importance to young plantations on the sea-coast, I would recommend in the first place the ground to be very thickly planted, as stated above, keeping the black Spruce,

Sycamore, Wych Elm, common Elder, and Willow on the bleak side; and in the next place, in the most exposed parts, I would have poles (not pleasing objects, but expedient) fixed firmly in the ground, and interwoven with good hay or straw ropes, three or four inches apart; and in other parts, such as inner clumps or plantings, the usual hurdles made of hazel or other coppice rods, would be found very serviceable. These were extensively used at a new place on the western coast, about half a mile from the sea, in a situation a good deal exposed to the west wind. Protected in this way, trees and shrubs in general succeeded well; and when the hurdles, &c., were removed in the spring of the second and third year afterwards, they appeared to sustain no injury. I would just observe, in conclusion, that great caution must be observed in thinning plantations in such localities. It is best to commence by lopping off the branches of those trees that are to be ultimately removed; then in a year or two to remove them altogether. This method would prevent the adopted plants from being too suddenly exposed, and would gradually inure them to greater severities. This plan has been adopted on the eastern coast, and after allowing the trees to afford protection through the approaching winter, they will next spring be removed altogether. *Joshua Major.*—*Gardeners' Chronicle.*

BRUSSELS HORTICULTURAL SHOW, OCT. 1.—I now come to the fruit rooms; here there were upwards of 80 exhibitors, among whom were the *Duc de Brabant*, *Comte de Flandres*, and *Princess Charlotte*. I had been led to expect a large collection of fruit; Flanders has the reputation of being *par excellence* the land of Pears; in it have been raised more and better varieties than in all the rest of Europe put together; I was not disappointed, for certainly finer specimens, as regarded size and form, it would be difficult to produce. I have, it is true, seen both in England and France as fine single specimens, but here you met them in almost every collection. That of M. De Bavay, of the Royal Nursery, Vilvorde, contained about 200 kinds of Pears, Apples, Plums, and Peaches. The collection of M. De Rasse, of Tournay, contained nearly 100 kinds of Pears, in which were also fine specimens; and in the collection of M. Desbuck, of Louvain, were also some very fine fruit, but he had also several very small, which gave it an uneven appearance. The exhibition from M. Louis, of Heverlé, contained very fine and large fruit, more especially of Duchesse d'Angoulême, Doyenné, Beurré d'Hiver, Calebasse bosc, Napoleon, Belle de Bruxelles, and Beurré d'Aremberg Pears. In that of M. Millet, of Ixelles, were some very large Pears, and some enormous Apples. M. Weytz, gardener to the Prince de Ligne, sent a small lot, containing, however, some very fine fruit. La Société de Pomone d'Antoing also contributed about 100 varieties; and M. Collignon furnished 115 varieties of Pears, and the like number of different Apples, some of which were very superior, though not at all equal to those of M. Bavay. M. Rummen had a small but very fine collection of Pears and some very large Melons; that of M. Joly contained enormous fruit of Duchesse d'Angoulême,

Belle de Bruxelles, Beurré gris, Calebasse bosc, Bezi de Chaumontel, and Bon Chrétien d'Espagne. I also noticed some very handsome Pears in that of M. Meys. As it is impossible to name all the finest varieties, I will pass on to the seedling Pears and Apples exhibited by M. Bivort, of Geest, Saint Remy, in which were Beurré Kennes (Bivort,) a very handsome large fruit; No. 2794, very large; Docteur Capron, No. 2820, Marie Louise Nouvelle (Van Mons,) and a splendid fruit numbered 1011. Among the seedling Apples the following particularly attracted my attention:—Nos. 3, 7029, 7003, bright yellow, 7007, red, and 7023, a beautiful golden red. M. Oувелx, of Huy, had also a collection of seedling Apples, in which were some very handsome specimens, but as they were not numbered I am unable to send any particulars. The Grapes were not ripe, and quite unfit for exhibition. The Pines were exhibited growing, and had nothing whatever remarkable about them. Among the Pears, one, Triomphe de Hasselt, was particularly conspicuous, from its enormous size and shape; it must have been at least six inches long, colour brownish green, and bell shaped; I only saw it exhibited by one person, M. Vandievoet.—*Foreign Cor. Gardeners' Chronicle*.

HORTICULTURAL EXHIBITIONS IN FRANCE.—It has been a very common, long established custom, to utter pompous phrases about horticulture; we shall, therefore, take good care to repeat none here. We shall not even repeat what so many others have said before us—that horticulture is the most delightful of sciences; but we wish to remark that the art of cultivation is, at present, very much the fashion. This is a peculiarity which is worthy of note; for among the ancients, and particularly the Romans, it was at those simple and rude epochs when the arts, luxury, and the corruptions of riches had not yet influenced the age, that the cultivation of the earth was chiefly held in honor.

With us, it seems that our tastes and inclinations have pursued an inverse course to that remarked among the Romans. It was not, certainly, among our simple, and even rude ancestors, when France was deprived of all the advantages and resources of luxury, of art and civilization, that the culture of the soil was the most esteemed: on the contrary, the haughty proprietors occupied themselves very little with the amelioration of the soil, or with the introduction of new, economical species of plants, etc.; they left this duty to their serfs, upon whom they bestowed very little respect. Civilization made little change in this state of things; it did not overcome the fatal, feudal prejudices against cultivators of the soil generally.

Now, that we have passed through these various stages, and that all the advantages of civilization, all the effects of luxury, and perhaps, also, corruption, which often follows it, have destroyed in us the simplicity of our ancestors, our tastes are becoming pastoral and rural. Our homes resound with the echo of agricultural labor—we are all cultivators. Now, great landholders themselves manage their estates, (or, direct the cultivation of their own lands;) they belong to agricultural societies, to which they bring the results of their expe-

rience, and receive, in return, the experience of others, and the new discoveries by which they profit. Happy exchange—happy enlightenment—which contributes eminently to the progress of science, to the prosperity of the country, and to the well-being of society. In pursuing this task, the horticultural societies have a noble position to fill. It is from them, indeed, that we may hope for the introduction into our culture, of new species of improved qualities, as well for the food of man and of animals, as for their value in the arts, medicine, etc. The importance of these associations of horticulture is fully appreciated at the present day; and we see in almost all the principal cities of France, that horticultural societies are formed, under the patronage of illustrious men, and under the auspices of noble ladies, who wish to contribute to the progress of science by distributing medals of encouragement to those horticulturists who have distinguished themselves either by their labors, or by the introduction of new plants for ornament or utility.—*Revue Horticole*.

MEDAL TO M. GRIS.—At the annual exhibition of the Royal Horticultural Society of Paris, a report was made by the vice president, M. PAYEN, on the use of *sulphate of iron* in curing the chlorotic diseases of plants (yellow and sickly foliage, etc.,) and a silver medal was awarded to M. EUSEBE GRIS, the young and learned chemist, who has devoted several years of study to this important subject.—*Revue Horticole*.

THE CHATEAU DES FLEURS.—A new hall, or structure of large size and great beauty, devoted to the exhibition and sale of flowers daily, has lately been opened at Paris, which is said to eclipse anything of the kind before attempted. Delicious music, turf enamelled with blossoms, large groups and masses of plants and trees, and the greatest profusion of flowers make up the effect of this luxurious establishment.

At a leading show, held in the Chateau on the 12th of September, Dahlias and China Asters disputed the palm for variety and beauty. There were 2000 pots of China Asters grouped in masses, and all the world admired the varied colours, their form, and size of the blossoms. The finest collections of Heaths, Fuchsias, Pansies, and other plants, made up the brilliant exhibition.

CHINESE AGRICULTURAL POPULATION.—There are few sights more pleasing than a Chinese family in the interior, engaged in gathering the tea leaves, or indeed in any of their other agricultural pursuits. There is the old man, patriarch-like, directing his descendants, many of whom are in their youth and prime, while others are in their childhood, in the labors of the field. He stands in the midst of them, bowed down with age. But to the honor of the Chinese, as a nation, he is always looked up to by all with pride and affection, and his old age and grey hairs are honored, revered and loved. When, after the labors of the day are over, they return to their humble and happy homes, their fare consists principally of rice, fish and vegetables, which they enjoy with great zest, and are

happy and contented. I really believe that there is no country in the world, where the agricultural population are better off than they are in the north of China. Labor with them is a pleasure, for its fruits are eaten by themselves, and the rod of the oppressor is unfelt and unknown.

I was one day travelling amongst the hills in the interior of the island of Amoy, in places where I suppose no Englishman had ever been before. The day was fine, and the whole of the agricultural laborers were at work in the fields. When they first saw me, they seemed much excited, and from their gestures and language, I was almost inclined to think them hostile. From every hill and valley, they cried, "*Wylœ-san-pan-fokie*," that is, "Be off to your boat, friend;" but on former occasions I had always found that the best plan was to put a bold face on the matter, and walk in amongst them, and then try to get them into good humor. In this instance the plan succeeded admirably; we were in a few minutes excellent friends, the boys were running in all directions gathering plants for my specimen box, and the old men were offering me their bamboo pipes to smoke. As I got a little nearer to the village, however, their suspicions seemed to return, and they evidently would have been better pleased had I either remained where I was, or gone back again; this procedure did not suit my plans, and though they tried very hard to induce me to "*wylœ*" to my "*san-pan*," it was of no use. They then pointed to the heavens, which were very black at the time, and told me it would soon be a thunderstorm—but even this did not suc-

ceed. As a last resource, when they found I was not to be turned out of my way, some of the little ones were sent on before to apprise the villagers of my approach, and when I reached the village every living thing, down even to the dogs and pigs, were out to have a peep at the "*Fokie*." I soon put them all, the dogs excepted, (which have the true national antipathy to foreigners,) in the best possible humor, and at last they seemed in no hurry to get rid of me. One of the most respectable amongst them, seemingly the head man of the village, brought me some cakes and tea, which he politely offered me. I thanked him, and began to eat. The hundreds who now surrounded me were perfectly delighted; "He eats and drinks like ourselves," said one. "Look," said two or three behind me, who had been examining the back part of my head, "look here, the stranger has no tail!" and then the whole crowd, women and children included, had to come round me to see if it was really a fact that I had no tail. One of them, rather a dandy in his way, with a noble tail of his own plaited with silk, now came forward, and taking off a kind of cloth which the natives wear here as a turban, and allowing his tail to fall gracefully over his shoulders, said to me in the most triumphant manner, "Look at that!" I acknowledged that it was very fine, and promised if he would allow me to cut it off, I would wear it for his sake. He seemed very much disgusted at the idea of such a loss, and the others had a good laugh at him. *Fortune's Three Years in China.*

DOMESTIC NOTICES.

WHITEWASH VERSUS PEAR BLIGHT—Dear Sir: In the Horticulturist for December, I observe a note from Mr. A. H. ERNST, of Cincinnati, who says that he has made up his mind that *sun* has more effect in causing the pear tree blight than either frost or insects, and joins with you in recommending as a preventive of such effect, the application of lime wash to the trunks and large limbs of trees, in order to reflect the sun's rays from them. As the lime wash was first recommended by you in the autumn of last year, and as it was probably applied by many persons in accordance with such recommendation, I wish to inquire, have you received information from which you infer that its application has prevented the blight in situations where it prevailed before the use of the lime, and where, in all probability, it would have appeared but for such application?

I have lost during the last summer, fifteen trees, (and some of the large branches from about as many more,) from the blight—not the *scolytus*, or insect blight, which attacks the extremities of the branch, from which many of my small trees have been injured, but from the disease which first makes its appearance on the trunk or large limbs of the tree. They all blossomed, and were in perfect health, apparently, previous to June. Some were thrifty and had made much new wood last year;

others, on the contrary, had made but little wood; to all of them the lime was applied as recommended by you. Previous to this season, I never lost a tree from this disease, and never had but one tree at all affected by it. From this, I do not wish you to infer that I mean to give it as my opinion that the lime was the cause of the disease; but it is certainly very evident, from the above facts, that it did not prevent it. If the sun causes the blight, and if the lime has the effect you expect from it, why were my trees affected after its application? Yours very truly. *Herman Wendell. Albany, Dec. 10, 1847.*

[REMARKS.—We have, as Dr. WENDELL supposes, received accounts from several of our readers, who made a trial of the whitewash on their pear trees last autumn. But the experiments were not considered by them or us as satisfactory, because simple lime-wash only being used in all cases reported to us, (except one, where a little salt was added to the lime,) the lime was washed off from all the smaller limbs by rain storms before the winter was half gone. Hence, it was impossible, in such cases, to expect any beneficial results from it; and we recommended this autumn the addition of a little *sizing* to prevent its being washed off the smaller limbs.

Dr. WENDELL does not inform us whether the

whitewash applied in the autumn remained on his trees during the whole winter. That would be necessary to enable us to judge whether it had a fair trial, supposing his trees to have suffered by frozen sap blight. If Mr. ERNST's view is correct, they may have been injured solely by sun blight; and in this case, the whitewash, to act as a preventive, ought to have been renewed in the spring.

Since Mr. ERNST's article has been in type, we have received the September number of the *Revue Horticole*, from Paris. The following extract from an article which it contains on the culture of the apple, by M. BRAVY, is highly interesting, as relating directly to this subject; and as exhibiting a singular coincidence of opinion on opposite sides of the Atlantic; for Mr. ERNST could not have seen this article when his own views were written, and we do not suppose M. BRAVY had seen ours regarding the use of whitewash, though written a year or more ago:

"The apple, like the pear, is very subject to canker (*chancre*,) a disease which, as I have already remarked, is produced by the impoverishment of the soil, and the excess of moisture, or of drouth. Besides these causes, I am convinced that the too powerful rays of a burning sun (*des coup de soleil trop ardents*,) occurring immediately after a shower or cloudy weather, and striking the stem or branches still wet, often produces, in young trees, the desiccation of some portions of the bark, or dry canker. What proves this, is the fact that these appearances show themselves almost always on the south side of the stem, and more especially the south-south-west side; or in common phrase, 'towards the two o'clock sun.' A very efficient means of protecting the trees is to coat them, in the spring, with a layer of whitewash. This operation, very simple and unexpensive, has additional advantages; it prevents the growth of moss and lichens on the bark, and destroys or drives away the insects which harbor there. I cannot too strongly recommend its use."

The foregoing paragraph comprises Mr. ERNST's theory of the blight, and our proposed remedy. We proposed it, theoretically, a year before the publication of M. Bravy's article; but he speaks of it as something whose practical value is well known to him; and he is considered one of the leading French horticulturists.

A word or two more touching the value of whitewash. The editors of the *American Journal of Agriculture*, Albany, in an article on this subject (July, 1847,) made the following remarks:

"We dissent from the author of this theory [meaning us,] in regard to the proposed remedy, viz., a coating of whitewash. This seems to have been proposed from a misapprehension of the nature of the coating itself; for, in fact, so far as the coating operates at all, it must promote, rather than retard, the freezing of the sap. An earthy material, of the nature of whitewash, is a better conductor of heat than the porous and partially dry cuticle itself."

Now, fortunately, the effect of whitewash is a matter not involved in much obscurity, and easily tested by experiment. It is, we believe, the point most fully conceded, that whether in winter or

summer, it is the sun's rays which cause the blight; in winter, by sudden thawing after frost, as we stated; in summer by the intensity of its rays, as Messrs. ERNST & BRAVY have pointed out. Hence, what is wanted would appear to be a protection against the sun's rays. For it is the sudden thawing in winter, and not the freezing, as the *American Journal* supposes, which does the mischief.

Common sense, as well as philosophy, tells us that dark colours exposed to the sun absorb most heat, while white reflects most. Hence, it very naturally follows that the bark of the pear tree, being brown, is capable of being heated by the sun's rays much more rapidly and completely than if it were white. To settle this point more precisely, before sitting down to write these remarks, we took two thermometers (Fahrenheit's,) agreeing perfectly. The day (19th Dec.) is very bright, but mild, with two inches of snow on the ground. To the bulb of one of the thermometers we gave a thick coating of whitewash and allowed it to become dry; the other was left as usual.

After being exposed for an hour to the full sunshine, the naked thermometer indicated 97°—the thermometer with the whitewashed bulb only 79°. This clearly shows a difference in favor of the whitewash, as a protector against the sun's rays, of 18°. When we consider that the colour of bark is dark, and therefore, it absorbs more heat proportionately than the clear glass or bright mercury of the naked thermometer, it is plain enough that, even in a winter's day, a coating of whitewash must have the effect of preventing the temperature of the bark, exposed to full sunshine, from rising as high as it would do by 20 degrees or more. Ed.]

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A NEW GRAFTING TOOL.—I herewith send you, for inspection, a new horticultural implement, which I call the *Horizontal Stock-Splitter*. Having long felt, in my own practice, the need of some improvement in the mode of splitting stocks for cleft-grafting, I last winter set myself to the task, and with the aid of a common blacksmith produced, in a few days, the article before you. It was extensively used the past spring in my own orchards and nurseries, and answered admirably the purpose for which it was intended. Its execution is easy, rapid, and altogether satisfactory. The stock is opened with a smooth, clean and uniform cut through the bark and wood, with little or no splitting, and to just the desired depth, (desiderata hardly to be secured by the use of the knife and chisel,) and of course a more perfect cleft is presented for the reception of the scion, and one which holds the scion more firmly than those produced by any former method.

As to root-grafting, where the roots are of the larger size, it is particularly well adapted, as at least a dozen stocks can be cleft by it per minute, and the work performed in the very nicest manner. It was for this use alone that the implement was originally designed; but by variously modifying its form and size, it could obviously be applied to a great variety, not only of horticultural but also of domestic and mechanical purposes—the power of the lever and knife combined being very great, and the working of the implement, when laid in a horizontal position, very easy and rapid.

If, after having fairly examined its merits, you think it worth while to have a drawing of it prepared for the *Horticulturist*, you will please to do so, for the benefit of any gentleman who may choose to give it a trial. Yours truly, *Asahel Foote*.
Williamstown, Mass., Oct., 1847.

[This appears to be an excellent labor-saving machine for those who wish to perform cleft-grafting—the usual mode—either extensively, or very

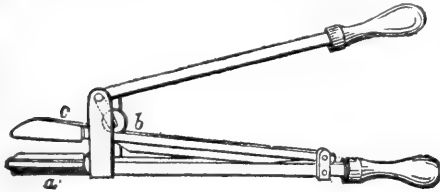


Fig. 43.—Foote's Stock Splitter.

nicely. A groove (sheathed with leather,) *a*, receives the stock, and a very slight application of force to the handle of the lever, acting upon the small wheel *b*, brings down the blade *c*, which performs its work with neatness and celerity. The implement is 18 inches long, including the handles; the latter being of wood, and may be easily made from the drawing; Mr. Foote generously placing his invention at the service of the public. Ed.]

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CLINTON GRAPE.—A native grape has been cultivated for several years in the western part of New-York, under this name, specimens of which have been sent us lately by J. W. BISSELL, Esq., of Rochester, with the following account:

I send you a few bunches of the "*Clinton*" grape. This variety is very hardy, ripens before the *Isabella*, is a good bearer, and also keeps better than the variety just named. The vine from which the cuttings were taken, was found by L. B. LANGWORTHY, Esq., growing in the garden of Mr. PEBBLES, on the Hudson, above Waterford; and as there were several other varieties in the same garden it is probably some old variety, though it has never been recognised here as such. The name it now bears was given by Mr. LANGWORTHY. Yours respectfully. J. W. B. Rochester, Nov. 27, 1847.

This appears to be a wild grape, or the seedling of a wild grape, quite distinct from the *Isabella*. The bunches sent us are not shouldered, of moderate size, and somewhat compact; (the berries set on shorter footstalks than those of the *Isabella*.) The berries are nearly round, or much less oval than those of the *Isabella*, and about two-thirds the size of the latter; colour black, with a thin blue bloom. Flesh somewhat pulpy, sweet and juicy, but with a somewhat rough and harsh after-flavor.

The *Clinton* grape is not equal to the *Isabella* for the table, though better than some other native sorts now in cultivation. In its adaptation to a northern climate, lies, we understand, its principal value; as it will flourish where the *Isabella* is found quite tender. We should judge it likely to prove a valuable wine grape; and it may produce a strong, rough wine, like *Port*.

TO PREVENT MILDEW IN GRAPES AND GOOSE-BERRIES.—*Dear Sir:* In accordance with your request, I now give you the result of my experiment in applying wood ashes to foreign grapes for prevention of mildew.

My principal vine border is about 300 feet long, 15 feet wide, and contains upwards of 300 vines in a bearing state, all foreign varieties.

I gave about two-thirds of this border a liberal supply of wood ashes late last fall, after the vines were covered for the winter, by spreading it on the surface of the ground; the other third received none.

The part of the border on which the ashes were applied was almost completely free from mildew, while the other part was very much injured by it; so much so, that the fruit was nearly destroyed: as, owing to the coldness and wetness of last season here, grapes generally have been more injured by mildew than for some years back.

My vines have been greatly injured for the last two years by a small saltatory insect, which I believe to be the Thrips; they are in immense numbers, and prey upon the leaves, commencing with those nearest the ground, which turn brown, wither and fall off before the fruit gets ripe. Can you suggest any plan to destroy them?

As far as my experience goes, I find the foreign grape succeeds best in an open airy exposure, if on the top of a slight rising ground, so much the better; as anything that prevents a free circulation of air, such as board fences or walls, has a tendency to cause mildew. The soil does not require to be deep, but should be thoroughly drained. My soil is a strong clayey loam; and I find those planted on the thinnest and clayeyest part succeed best. Of course, they will require to be well and regularly manured wherever planted.

I have found the above mode of planting a complete preventive for the mildew on gooseberries, also. For several years, when mine were planted in my garden, which is enclosed with a high board fence, the fruit of all kinds was so badly mildewed that none ripened. As a last resort, I removed them to an open place on a slight rising ground!; and since then, for the last four years, there has not been a trace of mildew on them.

I have a number of the best kinds, including Woodward's White Smith, Wellington's Glory, Crown Bob, Lion, Ocean, &c. &c.; but I find the Warrington Red to be decidedly the best of any for cultivation in this country, as it also was by far the best kind cultivated in England; it grows with me considerably larger than I ever saw it there. The fruit should be left on the bush till it gets quite red; this caution is necessary, as it is later of ripening than the generality of kinds, and by many would be considered ripe when only slightly coloured, as it is then very sweet and good. It hangs longer without spoiling, or cracking with wet weather, than any other kind; and though not one of the largest, it is considerably above medium size. I have raised quite a number of kinds from seeds, several of which have turned out very good; some are larger than any of my named kinds, and are finer flavored than any except the Warrington.

I have planted some superior wild kinds beside

the others, and mean to try and raise hybrids, as, also, to see what difference cultivation will make on the fruit. Yours truly. *James Dougall. Rosebank, near Amherstburg, Canada West.*

CLIMATE OF PART OF CANADA WEST.—With regard to the effect the proximity of the great lakes has in ameliorating the climate, I fear my observations have not been sufficiently accurate to give much interest. I, however, think that the climate here is as mild as it is considerably farther south on the sea-board; as I have, several times, left New-York city after the Dahlias had been destroyed by frost there, and on reaching here found them uninjured. The thermometer seldom falls very low in winter, and we have very little snow. We are, however, often subject to late spring frosts which do considerable injury, and which I think are caused partly by the large quantities of floating ice in the upper lakes at that season of the year.

On examination, I find the first fall frosts in the last three years, were on Oct. 15th, 1845, Oct. 22d, 1846, and Oct. 14th, 1847; and the latest spring frosts in the same years were on May 8th, 1845, April 15th, 1846, and April 18th, 1847. On 29th May, 1845, there was also a severe frost; but it was occasioned by a most destructive hail storm, the stones of which were from two to three inches in diameter, and covered the ground to the depth of a couple of inches.

The coldest days in the winter months of these years were,

1845, Jan. 31st, 10°; Feb. 6th, 8°.
1845 and '46, Dec. 18th and 19th, —1°; Jan. 22d, 4°; Feb. 26th, —1°.

1846 and '47, Dec. 15th, 17°; Jan. 8th, —3°; Feb. 23d, 5°; March 12th, 14°.

We are much troubled with some kinds of birds in this part, which, as far as I can see, confer little or no benefit to compensate for the loss of nearly all our fruit; as they only make their appearance in the gardens when the fruit begins ripening, and leave as soon as it is over. The worst are the *American Robin*, *Cedar Bird*, *Scarlet Tanager*, and *Louisiana Tanager*; of these, the last is decidedly the most troublesome, as nothing that I can try—nets, sheets, &c., can keep them from the fruit. They are very fond of gooseberries; and though I covered some bushes with nets, and others with sheets, they would creep under them and eat every berry on the bushes. As to cherries, we never get any ripe.

I am convinced my peach crop was much injured last season by the Orchard Oriole. When the trees were in blossom, I noticed several of these birds flying from flower to flower, and inserting their bill in each one on the tree, nearly. At first, I thought they were catching insects; but on closer examination I found it was the nectareous juice that they were sucking, as every flower they had been at had the corolla slit open to the bottom; while, on examining some branches that they had not been at, no insects could be discovered in the flowers. None of the flowers that were slit perfected their fruit; nearly all dropped off; a few set and produced deformed fruit, while the only ones that produced good fruit were the few they had missed. Should

these birds make their appearance next year, I intend giving them a warm reception.

I intended, to enable you to judge better the nature of our climate, to have given you the time of ripening of different kinds of fruit here; but I find I have forgot to do so at the proper place, and as my letter is already far too long, I will not trespass on the patience of your readers further at present. Yours truly. *James Dougall. Rosebank, near Amherstburg, Canada West, 6th Dec., 1847.*

REMOVING BUDDED PEACH TREES.—I have about seven hundred peach trees of my own raising. Last fall I had them budded with choice varieties, and lost about 15 per cent. of the buds; these I have again budded this fall. I am very anxious to set them out in their places next spring; and should be much obliged if you would inform me, through your journal, if I can remove those trees, which I budded this fall, with any hope of not losing the buds. I am, very respectfully, yours, etc. *F. C. B.*

[Yes, without losing one of the buds, if the removal is carefully done. Everything, of course, depends upon the care exercised not to rub off the bud which is to form the future tree. They should be headed down to within a couple of inches of the bud, before removal, or directly before planting them. We have seen hundreds of peach trees moved "in the bud," as nurserymen say, into good soil, and the buds make heads three or four feet high the same season.]

WILLIAM PENN CHRYSANTHEMUM.—We saw, last month, in the fine conservatory of N. J. BECAR, Esq., Brooklyn, N. Y., a new and remarkably fine Chrysanthemum, received, under this name, from Philadelphia. It appeared to us one of the most perfectly formed flowers of the genus we had ever seen: each blossom very full double, symmetrically shaped, and almost globular in form. The color is white; and it is, on the whole, much superior to any of the new European varieties of this old autumnal favorite, which have reached this country lately. Will some of our readers in Philadelphia give us an account of its origin?

NURSERYMEN'S CONVENTION.—A convention of nurserymen and fruit-growers was held at Columbus, Ohio, the first week in October, with the laudable purpose of comparing fruits from different sections of the State, correcting errors in names of fruits, establishing a correct standard of nomenclature for the varieties in general cultivation, etc. etc. Our correspondent, Mr. SPRINGER, was appointed chairman, and Messrs. ELLIOTT of Cleveland, and BATEHAM of Columbus, secretaries. The convention commenced the session, by "unanimously voting that the 'Fruits and Fruit-trees of America' be the standard work from which the names of fruits be determined." A large number of fruits, especially of apples, was, we understand, exhibited—and much confusion in nomenclature discovered, and the true names determined. Mr. ELLIOTT has, we learn, undertaken the labor of preparing a report of the proceedings, which we shall look for with interest.

THE SEASON.—The past autumn, and the early part of winter, have been unusually fine and mild with us. With the exception of three days of severe frost, at the close of October, the season has been singularly genial and warm, and the atmosphere remarkably clear and bright.

On the 29th of November, we had in our grounds pansies, mignonette, sweet alyssum, and some other plants still blooming finely. As late as the 12th of December, the weather was so mild, that vegetation was kept up in all late-growing plants; and we observed that a few blossoms of the *Mezereum*, one of the first vernal shrubs, excited by the spring-like warmth, began to make their appearance.

.....
NEW-HAVEN POMOLOGICAL SOCIETY.—A number of gentlemen in New-Haven, devoted to the culture of fruits, formed themselves, some time ago, into a society under this name; and, we have no doubt, in connexion with the zealous Horticultural Society of that city, will accomplish much towards that end, which now occupies so prominently so many horticulturists—the collection of fine fruits, and the attainment of something like accuracy in pomology. Meetings are held weekly at the houses of the different members, where specimens are exhibited, etc.

If societies of this kind, in different parts of the country, would carry on a system of *exchanges* in the products of the fruit garden and orchard, peculiar to their districts, a great deal of useful information might be accumulated and disseminated.

.....
TO DESTROY COCKROACHES.—If your correspondents will try the following simple plan, I will warrant them that every beetle and cockroach will shortly disappear, and that the kitchen will not again be infested. Add about a teaspoonful of powdered arsenic to about a table-spoonful of mashed boiled potatoes; rub and mix them well together, and then crumble about a third of it, every night at bedtime, about the kitchen hearth: it will all be eaten up, or nearly so, by the following morning. The creature is very fond of potatoes, and, devouring them greedily, crawls again into its hole and perishes. I had occasion to have some alterations made in the kitchen stove, six months after I pursued this plan, and found hundreds of wings and dried mummies of defunct cockroaches. Their disappearance was not attended with the slightest perceptible smell; and though five years have elapsed, not one has again been seen in my kitchen. In putting it into practice, any remaining crumbs should be swept up the next morning.—*F. H. Horner, M. D.* [We have tried the foregoing, and found it perfectly effectual. *Ed.*]

.....
THE FLOWER TRADE.—Some of your readers, who are "plain farmers," are, no doubt, in the habit of putting down flowers as "idle things, of little profit." Now I have been this morning making a little tour around among the principal florists; for I love to look at their treasures in the various pits, greenhouses and hothouses, that cluster thickly around the outskirts of a city like this. I will not weary you with the detail of all that I saw, nor even the names of the florists themselves, who appear to me to multiply every year as rapidly as their choicest cuttings, "struck in sand under bell-

glasses." Messrs. THORBURN & Co., DUNLAP, and HOGG, are still, however, the great purveyors of this kind of luxury; though there are many others who grow plants, in a wholesale way, more extensively than they—such, for example, as MANTEL, BALL, MONK, &c.

The great points kept in view by the city florists, are, growing a great quantity of the most popular flowers in pots, for the market sales in spring; and growing flowers for winter bouquets. The bouquet business is one of no small moment, and I am pleased to see it is every day increasing. I look upon it as a mark of the refinement of our people; for what gift can be more universally acceptable, more refined, or more touched with sentiment, than a fresh bouquet of lovely flowers? Truly our citizens think not. Not a ball can be given, that dozens of bouquets are not immediately wanted. The young gallant who makes his first timid offering, goes to DUNLAP for his bouquet of roses and violets; and the millionaire who wishes to delight and astonish Madame, sends to THORBURN for his rich arrangement of camellias. Opera-goers also provide themselves with wreaths and huge bouquets, to reward the successful prima donna; and the chamber of the valetudinarian is brightened by a daily offering from the hands of true friends. So that, as you see, every body is forced either by love, friendship, or vanity, to employ the beautiful language of flowers!

Well, you may suppose there must be a *somewhere* to produce all this wealth of Flora. If you go to THORBURN'S, (his garden, at Astoria, I mean,) you will find quite a forest of camellias. At MANTEL'S, I saw immense beds of sweet-scented violets and primroses, covered with glass, and in full bloom; while long cheap glazed structures, in all the florists' gardens, are filled with heliotropes, dwarf cape jasmines, stevias, roses, daphnes, heaths, and fifty other plants to supply the winter demand. One of the leading florists told me that he sold \$2500 worth of bouquets last winter! When I say that there are, of one grade and another, at least fifty florists who devote themselves to this branch of gardening in and about New-York, you will see how much of a tax is most cheerfully paid in our metropolis, for the enjoyment of beautiful flowers. What we need, to complete the thing, is a *Flower Market*, like that of Paris, where all the products may be seen assembled together in one brilliant *coup-d'œil*. *Rus in Urbe*. New-York, Dec. 1847.

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VALUE OF INORGANIC MANURES.—We quote the following from one of Mr. HORSFORD'S interesting letters to the *Albany Cultivator*. It was written from Giessen—Mr. H. being engaged in chemical studies under LIEBIG; and its significance will be the better understood by those who have perused the leading article in this number. *Ed.*

"In the spring preceding my arrival at Giessen, PROFESSOR LIEBIG planted some grape scions under the windows of the laboratory. He fed them, if I may use the expression, upon the ashes of the grape vine,—or upon the proper inorganic food of the grape, as shown by analysis of its ashes. The growth has been enormous; and several of the vines bore large clusters of grapes in the course of the

season. Indeed, I know not but all, as my attention was particularly drawn to them only since the fruit has been gathered. The soil, otherwise, is little better than a pavement—a kind of fine gravel, in which scarcely anything takes root. I was shown pots of wheat, in different stages of their growth, that had been fed variously—some upon the inorganic matters they needed—others had merely shared the tribute of the general soil. The result in numbers I don't yet know, but in appearance, no one could be at a loss what might be expected."

THE RULES OF AMERICAN POMOLOGY.—We are much gratified to perceive the strong interest manifested, in various parts of the country, in that good work of progress—the adoption of these rules—which we announced last month. Just as this number is going to press, we learn that the following societies have also adopted substantially the same rules, viz: The HORTICULTURAL SOCIETY OF ALBANY, the NEW-HAVEN HORTICULTURAL SOCIETY, and the POMOLOGICAL SOCIETY OF NEW-HAVEN. There can now scarcely be a doubt but they will soon be adopted by the horticultural societies in all parts of the country.

THE DEODAR CEDAR.—I think this beautiful evergreen tree, from the high mountains of India, described by you in the first volume of the Horticulturist (p. 17.) will prove a very fine addition to our hardy evergreens. I have had two specimens planted out, which have been fully exposed the last two winters, without the least injury; while young cedars of Lebanon have been slightly discolored or browned in their foliage by frost. With me it also grows as rapidly again as the cedar of Lebanon, and, at least, in a young state, is a more graceful and elegant tree. *X. Y. Z. N. York, Dec. 6, 1847.*

ASHMORE APPLE.—A specimen of this fruit is here, from Mr. J. Wood of Jefferson county. It is the most beautiful apple I have ever seen. It is

about the size of the Red Astrachan: the surface is glossy, smooth; and the color a rich crimson red, shaded into pale red, and from that into a pale yellowish white. It is also fine for eating; and from what I have now seen of it, I am decidedly of opinion that it will be much sought after as soon as it becomes known. *F. R. Elliott, Cleveland Herald.*

ERNESTINE DE BARENTE ROSE.—This is one of the new French roses, and is indeed a beautiful little flower, very regularly cupped, very double, and in shape much resembling a fine double ranunculus. Its size is scarcely larger than a quarter dollar, and its color is a bright pink. With its delicate, small, dark foliage, good habit, perfect hardness, and abundant blooming qualities, it forms one of the most desirable little floral gems we know. —*Parsons on the Rose.*

STRANGE PHENOMENON.—A few rods north of the Armory on the hill, is a deep hollow or dingle, down the bank of which the waste dirt of the shops has from time to time for a long period been thrown. This mass of rubbish, some weeks since, took fire spontaneously, and has been constantly burning since, notwithstanding the late powerful and heavy rains. The Eagle Company, No. 1, Capt. Tower, determined to try its skill with the devouring element. After throwing on to the burning pile vast quantities of water, which seemed to have the effect to concentrate the heat rather than to quench it, it burst forth from the uppermost point, ejecting fire, steam and smoke, to a considerable height, giving us a beautiful miniature volcanic eruption. On the bank, immediately over the burning pile, is a magnificent elm. This burning mass seems to have embraced the roots of the tree, warming it into summer life, expanding its buds almost to bursting, and in all probability will soon cover it with a beautiful foliage. —*Springfield (Mass.) Republican.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

October 16th, 1847.

President MARSHALL P. WILDER in the chair.

The following gentlemen were elected members of the Society: *Life*—James H. Welch, Boston. *Subscription*—Solon Dike, Stoneham; I. H. Bacon and Robert Bacon, Medford; Amherst A. Frazar, Boston; John Donald, Brighton.

October 22d, 1847.—President MARSHALL P. WILDER in the chair. The Committee of Publication submitted the following report:

The Committee of Publication of the Massachusetts Horticultural Society feels itself obliged to apologise for the delay which has taken place in the issue of the first number of the "Transactions," the sheets of which have long been ready.

This delay has arisen from an anxious desire to have plates in a style of excellence much superior to that of those which now accompany it.

After infinite trouble and disappointment, the Committee feels satisfied that the process of Chromolithing, in its present state, is not adapted to a work of the character which it is determined to stamp on the Transactions of the Massachusetts Horticultural Society, or to give even a faint idea of the drawings made by their artist, Mr. William Sharp.

While, therefore, the Committee regrets, extremely, that it is obliged to issue the present number with Chromolithed plates, it has resolved not only that the plates of the future numbers shall appear in a very different style, but that if possible, those of the first number shall be reproduced in a uniform manner.

Voted, That the report of the Committee of Publication be accepted.

October 30th, 1847.—President MARSHALL P. WILDER in the chair. The Committee on Fruits submitted, for adoption by the Society, the following Rules of Pomology:

[These Rules were published in the Dec. number of the Horticulturist, page 274.]

Voted, That the foregoing Rules be adopted by the Society.

Nov. 13th, 1847.—President MARSHALL P. WILDER in the chair. The following gentlemen were elected members of the Society: Edward N. Perkins, Brookline; George R. Milnot and S. M. Weld, Roxbury; Nathaniel Hooper, Edward King and Horace Gray, Boston; Daniel Chaplin, Cambridge; Alex. Pope and Benj. Hemmenway, Dorchester; James Hull, Somerville. Adjourned.

Horticulturist.

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

VOL. II.

FEBRUARY, 1848.

No. 8.

A VERY LITTLE OBSERVATION will convince any one that, in the United States, a new era, in *Domestic Architecture*, is already commenced. A few years ago, and all our houses, with rare exceptions, were built upon the most meagre plan. A shelter from the inclemencies of the weather; space enough in which to eat, drink and sleep; perhaps some excellence of mechanical workmanship in the details; these were the characteristic features of the great mass of our dwelling-houses—and especially country houses—a few years ago.

A dwelling-house, for a civilized man, built with no higher aspirations than these, we look upon with the same feelings that inspire us when we behold the Indian, who guards himself against heat and cold by that primitive, and, as he considers it, sufficient costume—a blanket. An unmeaning pile of wood, or stone, serves as a shelter to the bodily frame of man; it does the same for the brute animals that serve him; the blanket covers the skin of the savage from the harshness of the elements, as the thick shaggy coat protects the beasts he hunts in the forest. But these are only manifestations of the grosser wants of life; and the mind of the civilized and cultivated man as naturally manifests itself in fitting,

appropriate, and beautiful forms of habitation and costume, as it does in fine and lofty written thought and uttered speech.

Hence, as society advances beyond that condition, in which the primary wants of human nature are satisfied, we naturally find that literature and the arts flourish. Along with great orators and inspired poets, come fine architecture, and tasteful grounds and gardens.

Let us congratulate ourselves that the new era is fairly commenced in the United States. We by no means wish to be understood, that all our citizens have fairly passed the barrier that separates utter indifference, or puerile fancy, from good taste. There are, and will be, for a long time, a large proportion of houses built without any definite principles of construction, except those of the most downright necessity. But, on the other hand, we are glad to perceive a very considerable sprinkling over the whole country—from the Mississippi to the Kennebec—of houses built in such a manner, as to prove, at the first glance, that the ideal of their owners has risen above the platform of mere animal wants: that they perceive the intellectual superiority of a beautiful design over a meaningless and uncouth form; and that a

house is to them no longer a comfortable shelter merely, but an expression of the intelligent life of man, in a state of society where the soul, the intellect, and the heart, are all awake, and all educated.

There are, perhaps, few persons who have examined fully the effects of a general diffusion of good taste, of well being, and a love of order and proportion, upon the community at large. There are, no doubt, some who look upon fine houses as fostering the pride of the few, and the envy and discontent of the many; and—in some transatlantic countries, where wealth and its avenues are closed to all but a few—not without reason. But, in this country, where integrity and industry are almost always rewarded by more than the means of subsistence, we have firm faith in the *moral* effects of the fine arts. We believe in the bettering influence of beautiful cottages and country houses—in the improvement of human nature necessarily resulting to all *classes*, from the possession of lovely gardens and fruitful orchards.

We do not know how we can present any argument of this matter, if it requires one, so good as one of that long-ago distinguished man—Dr. DWIGHT. He is describing, in his *Travels in America*, the influence of good architecture, as evinced in its effects on the manners and character of the inhabitants in a town in New-England:

“There is a kind of symmetry in the thoughts, feelings, and efforts of the human mind. Its taste, intelligence, affections, and conduct, are so intimately related, that no preconception can prevent them from being mutually causes and effects. The first thing powerfully operated upon, and, in its turn, proportionately operative, is the taste. The *perception* of beauty and deformity, of refinement and grossness, of decency and vulgarity, of propriety and inde-

corum, is the first thing which influences man to attempt an escape from a grovelling, brutish character; *a character in which morality is chilled, or absolutely frozen*. In most persons, this perception is awakened by what may be called the *exterior* of society, particularly by the mode of building. Uncouth, mean, ragged, dirty houses, constituting the body of any town, will regularly be accompanied by coarse, grovelling manners. The dress, the furniture, the mode of living, and the manners, will all correspond with the appearance of the buildings, and will universally be, in every such case, of a vulgar and debased nature. On the inhabitants of such a town, it will be difficult, if not impossible, to work a conviction that intelligence is either necessary or useful. Generally, they will regard both learning and science only with contempt. Of morals, except in the coarsest form, and that which has the least influence on the heart, they will scarcely have any apprehensions. The rights enforced by municipal law, they may be compelled to respect, and the corresponding duties they may be necessitated to perform; but the rights and obligations which lie beyond the reach of magistracy, in which the chief duties of morality are found, and from which the chief enjoyments of society spring, will scarcely gain even their passing notice. They may pay their debts, but they will neglect almost every thing of value in the education of their children.

“The very fact, that men see good houses built around them, will, more than almost anything else, awaken in them a sense of superiority in those by whom such houses are inhabited. The same sense is derived, in the same manner, from handsome dress, furniture, and equipage. The sense of beauty is necessarily accompanied by a perception of the superiority which it pos-

sesses over deformity; and is instinctively felt to confer this superiority on those who can call it their own, over those who cannot.

"This, I apprehend, is the manner in which coarse society is first started towards improvement; for no objects, but those which are sensible, can make any considerable impression on coarse minds."

The first motive which leads men to build good houses is, no doubt, that of increasing largely their own comfort and happiness. But it is easy to see that, in this country, where so many are able to achieve a home for themselves, he who gives to the public a more beautiful and tasteful model of a habitation than his neighbors, is a benefactor to the cause of morality, good order, and the improvement of society where he lives. To place before men reasonable objects of ambition, and to dignify and exalt their aims, cannot but be laudable in the sight of all. And in a country where it is confessedly neither for the benefit of the community at large, nor that of the succeeding generation, to amass and transmit great fortunes, we would encourage a taste for beautiful and appropriate architecture, as a means of promoting public virtue and the general good.

We have said beautiful and *appropriate* architecture—not without desiring that all our readers should feel the value of this latter qualification as fully as we do. Among the many strivings after architectural beauty, which we see daily made by our countrymen, there are, of course, some failures, and only now and then examples of perfect success. But the rock on which all novices

split—and especially all men who have thought little of the subject, and who are satisfied with a feeble imitation of some great example from other countries—this dangerous rock is *want of fitness, or propriety*. Almost the first principle, certainly the grand principle, which an apostle of architectural progress ought to preach in America, is, "keep in mind PROPRIETY." Do not build your dwelling-houses like temples, churches, or cathedrals. Let them be, characteristically, dwelling-houses. And more than this; always let their individuality of purpose be fairly avowed; let the cottage be a cottage—the farm-house a farm-house—the villa a villa, and the mansion a mansion. Do not attempt to build a dwelling upon your farm after the fashion of the town-house of your friend, the city merchant; do not attempt to give the modest little cottage the ambitious air of the ornate villa. Be assured that there is, if you will search for it, a peculiar beauty that belongs to each of these classes of dwellings that heightens and adorns it almost magically; while, if it borrows the ornaments of the other, it is only debased and falsified in character and expression. The most expensive and elaborate structure, overlaid with costly ornaments, will fail to give a ray of pleasure to the mind of real taste, if it is not appropriate to the purpose in view, or the means or position of its occupant; while the simple farm-house, rustically and tastefully adorned, and ministering beauty to hearts that answer to the spirit of the beautiful, will weave a spell in the memory not easily forgotten.

MALAGA RAISINS.—These are all made by merely drying the large white Muscatel grape, without the addition of any ingredients. They are all raised within two leagues of the southern Spanish coast, and do not succeed further inland. The Lexia raisins, used for puddings, are, however, produced in the interior.

CULTURE OF PARLOR PLANTS—CAMELLIAS AND AZALEAS.

BY J. B. W., NEW-YORK.

As I see by occasional queries, in your journal, that there are some—perhaps many—of your fair readers desirous of gaining information on the care and culture of those green-house plants, kept in parlors, I will venture to offer, now and then, through your columns, the result of some experience in this kind of culture for fifteen years past.

The two finest genera of plants, usually cultivated in dwelling-rooms, are, unquestionably, the *CAMELLIA* and the *AZALEA*. Both of these plants are remarkable for the great beauty of their flowers; and taken together, they furnish a bloom for the parlor from December to May. The *Camellias* are in their perfection in the first part of the winter—the Chinese *Azaleas* in the last part. The first are not more remarkable for the size, symmetry and richness of their flowers, than are the last for the delicacy, elegance and profusion of their blossoms. Take these two plants, in all their variety, and they would alone fill a very large conservatory. A few select varieties of each are, of course, all that room can be found for in the parlor; but when their merits are all told, they certainly deserve a preference over all other plants for this purpose. I shall, therefore, devote a few words to-day to the care and culture of these plants only.

I should say, in the beginning, that the greatest evils the *Camellia* has to contend with in parlor culture, are—first, in the changes from heat to cold; and second, in a dry and dusty atmosphere. The *Camellia* will bear a great deal of cold without injury; but it very quickly suffers if there

is a rapid change in the temperature of a room. It ought, therefore, to have a position as much guarded as possible against these changes; and in a cold climate, perhaps this is more effectually attained by a double window, hung casement-like, so that the inner one may be opened in the day time and closed at night; or kept closed altogether in extremely cold weather. (Double glazing has the effect of decomposing the light, and is therefore not so good in strong day-light or sunshine.)

When the blooming season approaches, a room where *Camellias* are kept should, in its temperature, be as nearly uniform as possible. It ought not to sink below 50° of Fahrenheit's thermometer. The plants should be regularly watered every day; but no more water should be given than the roots are able to take up; and this may be easily ascertained by looking to see the state of the top soil. If this is positively wet, you may feel quite certain that not a drop more water ought to be given while it remains so. You will, therefore, omit watering for one or two days, as the case may be. When the plant gets fairly in a blooming condition—that is, when several flowers are beginning to expand, you may water *once a week* with guano water; made by infusing a pound of guano in ten gallons of water. This will give additional size and strength to the blossoms. After the flowers drop, and just as the plant begins growing, you may use this guano water *three times a week*. Everything for the next year depends on the growth of the *Camellia* at this time; for its whole growth for the next twelve months is completed in about three

weeks: and whether you are to have a fine setting of bloom-buds for the next winter, and fine shoots and foliage, depends altogether on the advantages of light and food which your plants have during these critical three weeks named. The advantage of guano water in making fine foliage and fine bloom-buds, is now abundantly proved by experiment; there being but few of our best practical growers of the Camellia who do not use it at that season.

The *breathing pores* in the leaf of the Camellia are rather small, and therefore easily choked up with the dust from a grate. Hence, it is well to wash off the leaves with a syringe once in eight or ten days. I have, for a couple of years, followed this mode with the best results. I wrap the pot round about with a bit of coarse cloth, to prevent the soil from being displaced, and from getting over-wetted. I then set the plant down sideways in a bathtub, and give it a gentle *shower-bath* of luke warm water. Syringing with a common hand syringe is equally good, but not so rapidly performed. I am quite satisfied, from experience, that a shower-bath is as

salutary and necessary to a house plant as to a sedentary man.

The Chinese Azaleas are so easy of culture, and they are so hardy, that they will bloom quite well in a room where "Jack Frost" occasionally enters; and regular watering is almost all they need in the common routine. The main point in growing them, is to watch them well when they are making the spring growth; (for, like the Camellia, everything of the next year's thrift and bloom is settled then;) and not let them, at that time, lack water and a little liquid manure every other day.

The best soil for the Camellia is made by mixing one-half turfy loam, one-third well rotted manure, (from an old hot-bed,) and the rest leaf mould from the woods. For Azaleas, equal quantities of turfy loam, well decomposed dung, and peat earth. I ought perhaps to add, for the novice, that "turfy loam" is gotten by laying up sods from a good piece of old meadow, or pasture, in a heap to heat and rot.

I will say something of other parlor plants hereafter. Yours respectfully. J. B. W.

New-York, Dec. 9th, 1847.

ON THE PRACTICAL USE OF LEAVES.

BY HENRY WARD BEECHER.

THERE are two facts in the functions of the leaf, which are worth consideration on account of their practical bearings. The food of plants is, for the most part, taken in solution, through its roots. Various minerals—silex, lime, alumina, magnesia, potassa—are passed into the tree in a dissolved state. The sap passes to the leaf, the superfluous water is given off, *but not the substances which it held in solution*. These, in part, are distributed through the plant, and,

in part, remain as a *deposit in the cells of the leaf*. Gradually the leaf chokes up, its functions are impeded, and finally entirely stopped. When the leaf drops, it contains a large per cent. of mineral matter. An autumnal or old leaf yields, upon analysis, a very much larger proportion of earthy matter than a vernal leaf, which, being yet young, has not received within its cells any considerable deposit. It will be found, also, that the leaves contain a very much higher

per cent. of mineral matter than *the wood of the trunk*. The dried leaves of the Elm contain more than eleven per cent. of ashes, (earthy matter,) while the wood contains less than two per cent.; those of the Willow, more than eight per cent., while the wood has only 0.45; those of the Beech 6.69, the wood only 0.36; those of the (European) Oak 4.05, the wood only 0.21; those of the Pitch Pine 3.15, the wood only 0.25 per cent.*

It is very plain from these facts that, in forests, the mineral ingredients of the soil perform a sort of *circulation*; entering the root, they are deposited in the leaf; then, with it, fall to the earth, and by its decay, they are restored to the soil, again to travel their circuit. Forest soils, therefore, instead of being impoverished by the growth of trees, receive back annually the greatest proportion of those mineral elements necessary to the tree, and besides, much organized matter received into the plant from the atmosphere; soils therefore are gaining instead of losing. If the owner of parks or groves, for neatness sake, or to obtain leaves for other purposes, gathers the annual harvest of leaves, he will, in time, take away great quantities of mineral matter, by which the soil, ultimately, will be impoverished, unless it is restored by manures.

Leaf manure has always been held in high esteem by gardeners. But many regard it as a purely *vegetable substance*; whereas, it is the best mineral manure that can be applied to the soil. What are called vegetable loams, (not peat soils, made up principally of decomposed *roots*,) contain large quantities of earthy matter, being mineral-vegetable,* rather than vegetable soils.

Every gardener should know, that the

best manure for any plant, is the decomposed leaves and substance of its own species. This fact will suggest the proper course with reference to the leaves, tops, vines, haulm, and other vegetable refuse of the garden.

The other fact connected with the Leaf, is its function of *exhalation*. The greatest proportion of crude sap which ascends the trunk, upon reaching the leaf, is given forth again to the atmosphere, by means of a particularly beautiful economy. The *quantity* of moisture produced by a plant is hardly dreamed of by those who have not specially informed themselves. The experiments of Hales have been often quoted. A sunflower, three and a half feet high, presenting a surface of 5.616 square inches exposed to the sun, was found to perspire at the rate of twenty to thirty ounces avoirdupois, every twelve hours, or seventeen times more than a man. A vine with 12 square feet, exhaled at the rate of five or six ounces a day. A seedling apple tree, with twelve square feet of foliage, lost nine ounces a day.*

These are experiments upon very small plants. The vast amount of surface presented by a large tree must give off immense quantities of moisture. The practical bearings of this fact of vegetable exhalation are not a few. Wet forest-lands, by being cleared of timber, become dry; and streams, fed from such sources, become almost extinct, as civilization encroaches on wild woods. The excessive dampness of crowded gardens is not singular, and still less is it strange that dwellings covered with vines, whose windows are choked with shrubs, and whose roof is overhung with branches of trees, should be intolerably damp; and when the good housewife is scrubbing, scouring and brushing, and, ne-

* See Dr. Gray's Botanic Text Book, an admirable work, which every horticulturist should own and study.

* Lindley's Horticulture, p. 42-44. Gray's Botany, p. 131.

vertheless, marvelling that her house is so infested with mould, she hardly suspects that her troubles would be more easily removed by the axe or saw, than by all her cloths and brushes. A house should never be closely surrounded with shrubs. A free circulation of air should be maintained all about it, and shade trees so disposed as to leave large openings for the light and sun to enter. The unusual rains of the current season have produced so great a dampness in our residences, that no one can fail to have noticed its effect, both on the health of the occupants, and upon the beauty and good condition of their household substance. —*Western Farmer and Gardener.*

ON THE IMPROVEMENT OF SMALL FRUITS.

BY DR. WM. W. VALK, FLUSHING, N. Y.

THIS is the title of an interesting paper, at page 506 of the *London Horticultural Magazine* for November, 1847, therein copied from the *Gardeners' Journal*, another English periodical of considerable merit. We also have in the *Horticulturist* for December, page 265, a very promising statement, in the shape of "Notes on Currants, Raspberries, &c.," by a writer whose enthusiasm is boundless; yet our hopes are somewhat checked by a very natural feeling of regret, that anticipations may be less than realized, inasmuch as the author's constant "oppression" of business, is more than likely to interfere with that personal attention, so essential to the process of raising better fruit than we have already.

No reflecting man at all doubts that a vast field is open for improvement, in the size and quality of what are termed the small fruits. A great deal has already been accomplished, but not enough to be satisfied with; for the present generation is as restless of change in horticulture as in everything else: it will have the *best*, if at all attainable. The rage for *novelties*, whether in fruits or flowers, is of a decidedly epidemic character; if a thing is *new*, no matter what are its qualities, amateurs are desirous of possessing it, and not unfrequently

when they have got it, and tested its merits by personal observation, every hope but ends in the severest disappointment; and the discovery is made, when too late, that it is one thing to grow and *sell*, quite another to purchase, on the strength of puffs in advertisements or catalogues, even though the latter may have reached the 36th edition.

The writer of the article in the *Gardeners' Journal* asks—"what *can* be done for the Strawberry, the Raspberry, the Gooseberry, and the Currant?" He has yet to learn what *has* been done, and does not dream of the operations that have been going on in "our own country." He is not aware, that on this side of the Atlantic a Nursery exists, "whose accuracy is positive;" so positive indeed that a fruit, described in the Catalogue of 1845, as "*first in flavor and quality*," is, in 1847, set down as "*worthless*." We can tell Mr. Tomlinson that he is likely to come out second best in his efforts to improve the Currant; for *we* take "the climax of European attainment as the starting point for American development." There are Currants growing (seedlings, we presume,) in "a nursery" in this village, "equal to the largest he (Mr. T.) enumerates, which he does not possess, and

probably knows not of." No matter where they came from, or how they were produced; here they are, and the public will be able to judge of their qualities in the course of time, if they do not *change* their character too soon.

What has been done for the Strawberry? A great deal in England and upon the continent; but, as we always start from the "*climax*" of attainment by our transatlantic brethren, it follows that more has been done here than there. At all events, those who raise seedlings *to sell*, say so; and as their statements are, perhaps, altogether disinterested, we shall have to believe them. We have seen the time when it was all "*silly twattle*" to talk about male and female strawberry plants; but these days have departed, and seedlings innumerable are now raised by *artificial*(?) fecundation. There are several excellent varieties of the Strawberry in cultivation, quite good enough for most people: still, we want better; and seedlings are increasing at a wonderful rate—all named too—and "excellent" in quality. Nothing is easier than to originate tens of thousands of plants from the seed; but, "are these experiments conducted with any special aim? Are the new sorts bred with reference to certain desiderata?" Does the experimenter look to certain results, based upon his efforts at impregnation, in crossing varieties? Are the seedlings offered to the public, really hybrids?

Impregnation is not a process so easily accomplished as some persons would have us think. It requires calculation, sagacity, delicate manipulation, and a sufficient knowledge of the subject, so as not to fail, or to create insignificant varieties.

If the small fruits have been, and are to be *improved*, there must be some *specific objects* presented to the mind for accomplishment. What these objects were, with

the growers, we have no means of judging; nor do we know what they are. A gentleman in a western state has raised "choice varieties of new seedling Strawberries, confidently recommended to the public as superior to any heretofore cultivated." By what process did he raise them? From what varieties did they originate? Was the seed produced by hybridization by the hand? Or was it not impregnated at all? or only by the bees? For aught we know, these seedlings may have been only accidental; or, perhaps, the seed of choice varieties may have been saved and sown, with a view to the selection of improved sorts. Another grower's varieties are "incomparably superior to any others, and nowhere else obtainable." Truly, says the editor of the Horticulturist, parents are partial to their own offspring; "second and third-rate seedlings are pressed upon public attention as fruits of the finest quality—unsurpassed and unsurpassable. The public are asked to buy and plant these new sorts, which, when fairly proved, turn out to be of no value, or decidedly inferior to those already in cultivation." Where is the *improvement* in cases like these? Where the benefit, but to the pockets of those who sell?

It is admitted that for *size*, *productiveness* and *great beauty*, no Strawberry on this continent is superior to *Hovey's Seedling*. It is altogether the best adapted for general culture; and, if with its other qualities we could say it had the requisite *flavor*, it would stand without a rival. The improvement here, would be to supply what was wanting *by a cross with such varieties as possessed high flavor*; and not a few such are cultivated. An attempt of this kind requires some patience and care. The principle is obvious, and of general application with other different sorts; nor is there a

doubt but that the most gratifying success would ultimately reward the labors of the cultivator. Mr. A. says his seedlings are superior to *any* heretofore cultivated; so says Mr. B., and so says everybody else who has raised seedlings. But is it so? Are *all* the seedling Strawberries, which have been so liberally eulogized by the *raisers* of them, better than any now grown? Are they *as good*? "Is there good reason, aside from their *newness*, why they should supplant old sorts in our gardens?" In what respect do they claim admission among standard Strawberries? These queries of Mr. BEECHER are pertinent. We know that "the fever for originating small fruits" has set in, in many quarters; and we "shall be deluged with novelties," of which nine-tenths will be no better, if so good, as their predecessors.

Do those gentlemen, who raise and advertise their seedling fruits, mean to say that they are hybrids,—true crosses of estimable varieties, with a view of securing the *valuable* properties of both? We have said already, that impregnation is not the *easy* process some imagine it to be. To apply the pollen of one flower to the stigma of another, appears simple enough; but, simple as it is, a few precautions are absolutely necessary. Whether it be "silly twattle" or not, we assert the pollen to be the *male parent*—the stigma, the *female*. "The female flower must be deprived of her stamens, before they burst and disperse their pollen; and as soon as the stigma is glutinous enough to hold it fast, the pollen must be applied *with care*. Should this care *not be taken*, the stigma is very likely to be inoculated with the pollen of her own, or some other flower, and then the pollen which it is intended to use *will not take*; for it is to be borne in mind, that a stigma *once* inoculated cannot be inoculated again. From

want of these precautions, people are continually fancying they have obtained hybrids, when they have only gained *natural* seedlings." This is the process of hybridizing where improved *flowers* are sought after; and the principle is the same in every attempt to obtain a new and valuable fruit. It is making progress at a snail's pace to save seeds "with one's own hands," though they be "of every estimable variety," unless they have been *judiciously and carefully impregnated*, to the end that the good shall become better. The improvement must be looked for with a reasonable degree of certainty, and not left to be the result of the merest chance, which it must necessarily be in selecting one or two natural seedlings from, perhaps, ten or twenty thousand.

The Hovey's Seedling lacks *flavor*; how shall *this* quality be imparted to it? It is a pistillate plant, and must be impregnated by some other (staminate,) to produce its fruit. Proceed thus: plant one dozen Hovey's (fine strong plants,) in a frame—four rows—three in a row. Between these set out three or four equally fine plants, of *Alice Maude*, *Swainstone*, or any other variety having *size* and *flavor* to recommend it. Grow these plants with due care, and when the lights are off or open, protect them from any intermixture from other sorts by a covering of gauze; thus excluding bees or other insects. When the fruit on the Hovey's, is fully ripe, gather it and wash out the seeds; plant them at the proper time, keep them distinct from all others, grow them as carefully as possible, and look for the result. A proceeding like this is but the index to all others, excepting that in some cases, the fertilization must be artificially effected between different varieties; otherwise they will impregnate themselves, and thus defeat the object contemplated.

Of course, every precaution will be exercised to ensure success; and our labors are frequently rewarded by the production of varieties every way better than their parents. Hybrids generally partake most strongly of the parent *furnishing the pollen*; it is, therefore, of very great consequence to make the selection with this fact strongly impressed upon the mind.

What can be done for the Raspberry? This is rather a difficult question to answer; for, among the large list of sorts cultivated, there are qualities to be found pretty nearly suited to various tastes. The writer in the *Gardeners' Journal* does not think that as much improvement is to be looked for with this fruit as with the others. In size, appearance, and flavor, the *Fastolff*, *Franconia* and *Antwerps*, when well grown, are as good as Raspberries need be. Whether or not "the God of Nature planted but one edible species in the eastern hemisphere," is not here a matter of any consequence; the cultivators of Europe have done their part in *improving* what they had; and our *best* varieties, at present, are of foreign growth. True, there are some American varieties said to be "beautiful and estimable," and of a peculiar colour; but they are not *better* than those specified—perhaps not so good. Something very promising may be anticipated by those who read, that a Long Island nurseryman has "numerous seedlings, *partly hybridized*, of the American White, Ohio Monthly, *Franconia*, and Red and White Antwerp varieties." It would be interesting to know *how* this partial hybridization was effected, and whether or not there was a definite object sought for in the experiment.

In two particulars, the Raspberry can certainly be very much improved, viz., in the solidity or firmness of the berry, and lateness of bearing. The season of this fruit,

with the finest kinds, is much too short; and when fully ripe, they do not bear carriage as well as some others not quite as much esteemed. Very interesting products might be reasonably anticipated, from fertilizing the Antwerps, *Fastolff* and *Franconia*, with the English double bearing Red, and the true Alpine. Important results are far more likely to follow when *artificial* means are resorted to, than when the seed is planted *without* it; and the grower relies altogether on the chances of his seedling lottery. He *may* obtain a prize; but it is a thousand to one that he does not.

What can be done for the Gooseberry? If the question were, what *has* been done in America, we should be obliged to say—nothing. In England, this fruit is far more esteemed and extensively grown than with us. An improvement would certainly be, to impart high flavor to the larger sorts. Quality is as much a desideratum as size, and much more of a recommendation with amateurs generally. New forms, lateness of maturity, and increased size, would all be regarded as improvements; and "these results are only waiting the well directed efforts of some zealous individual to meet a full realization." In many of our gardens this fruit mildews badly; the causes—poor soil, and a want of uniform moisture at the root. The remedies are obvious.

What can be done for the Currant? Why cannot these be grown as large as grapes, and as sweet, too? These properties would indeed be improvements, and give to the fruit a character it has never yet possessed. The largest varieties at present cultivated with us, will bear no comparison with even the smallest grapes; and their flavor is more or less acid. The *Gondouin Red*, *Cherry Red*, *Haughton Castle*, and *Goliah*, are *new* varieties, not imported that we know of, and not of an established charac

er in England. We have grown the *Ce-rise de Tour's* one season, but cannot yet speak of it with confidence. It is figured in the "*Annales De Flore et de Pomone*," for February, 1844, and if correctly represented, is the largest Currant known. This variety, with the Provence's, and the Large French White, would make excellent breeders; and Currants as large as "small marbles" may yet be produced.

Now if amateurs, gardeners and nurserymen, will but give the matter of the improvement of small fruits their *earnest* and *well directed* attention, results of the most gratifying character would soon be produced. "Many persons are deterred from experiments of this kind, under the impression that it is a work of magnitude. This is, to a great extent, erroneous. The idea has indeed gone forth, and seems to be widely dispersed, that the per-centage of improvement among seedling plants is infinitesimally small, and that a very large number must be grown to offer even a remote chance of success; but this idea, doubtless, *owes its origin to the too common practice of saving seeds promiscuously, without regard to impregnation. From such a progeny, little indeed may be expected: it is a waste of time and labor to act thus, with the view of originating improved varieties of any kind of fruit; and one carefully fertilized seed is worth a hundred so obtained.* If, however, the thing be attempted on principle, it becomes an easy task; and not only is the labor lightened, but the chances of a satisfactory result are at the same time greatly increased. Suppose one hundred gardeners were each to fertilize one Strawberry blossom, according to their own ideas of what blending of varieties would constitute an improvement; the trouble of doing so would be so trifling as not to be worthy of mention, while it is probable that even

the first results would be important. But in these matters we must not be satisfied with first results; a second or third cross of the hybrid with the male parent, (if the latter be well chosen,) would most likely result in considerable further improvement."

"The practice under consideration may, however, be perverted. The perversion we refer to, is that of naming and distributing seedling fruits that really do not possess any property superior to those of older and well known kinds. This must always be deprecated. If those who raise seedling fruits do not know their true worth, they should submit them to competent judges. The probability of varieties, perhaps good in themselves, but not better than the older sorts, being passed off as possessing superior properties, is so great, that every raiser of seedling fruits should set his face against the practice. Our fruit lists are already encumbered with too many such—all not a jot better, and *many actually worse*, than those whose place they would occupy. In cases where varieties are obtained that really do possess superior, though slightly improved properties, it would be better to *retain such as breeders*, than to propagate and sell them for general cultivation. The horticultural world need not be troubled with results *until something decidedly good and distinct has been obtained.*" We go further, and say—that these novelties should never be sold, or in any way disseminated, unless *proved* to be better than the *best* varieties now cultivated. A nurseryman has justly remarked, in his Catalogue for 1847, that "*nothing can be more silly than for each one who raises a seedling Strawberry, to forthwith announce it as 'superior to all others, &c.'* when they have seen but few of the *best varieties.*" We fear, however, that silly though it be, some nurserymen have done the very thing so judiciously condemned.

These things have no good tendency; on the contrary, they are only productive of evil.

Experimental hybridization is best conducted on a limited scale. One case of cross-breeding, carefully wrought out, *on correct principles*, is more pregnant with really useful and valuable consequences than a thousand promiscuous ones, or a hundred carelessly prosecuted, while, of course, the labor and trouble attending the experiments, becomes lessened in proportion.

Thus reasons an able writer. We have italicised a few remarks to give them force, and somewhat altered the phraseology of a line or two. What *has* been done for the small fruits, and what *may* be done by our gardeners and amateurs, time will show; and, it will also show, that a large majority of the so called magnificent and incomparably superior varieties—so styled by the authors of their origin—are not worth growing.

WM. W. VALK, M. D.

Flushing, L. I., December 30, 1847.

NEW OR RARE FRUITS.

I. THE MELON APPLE.

Norton's Melon,* } of some.
Watermelon,

AMONG all the new dessert apples that have been originated in this country, within the last few years, and the number is not small, we consider two varieties, which have been introduced to public notice from Rochester, N. Y., as especially deserving the attention of all cultivators. The first of these is the *Northern Spy*, with which our readers are already familiar; the second is the *Melon*. Both have added to usual good qualities, one characteristic excellence in great perfection, viz., exceeding freshness of flavor, juiciness, and crispness. The *Northern Spy* is universally popular, where it is known, as a late winter, or spring fruit; and the *Melon* apple deserves to be held in equally high estimation as

* This fruit was first noticed by Mr. BARRY, in the *Cultivator* as *Norton's Melon*. It is also called, by some cultivators, the *Watermelon* apple; but the latter name is applied to another variety.

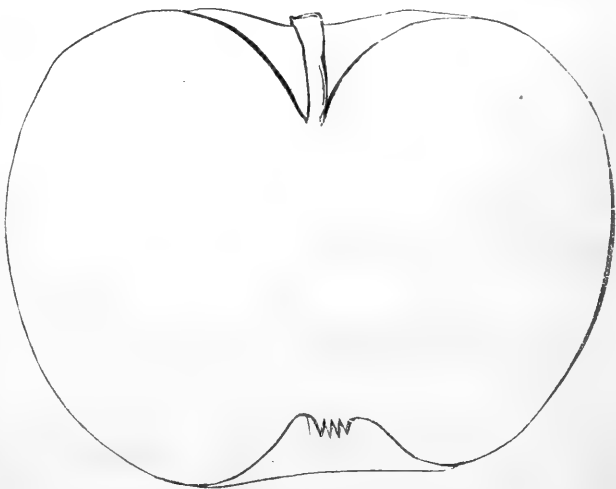


Fig. 44.—The Melon Apple.

one of the most delicious and valuable of early winter fruits.

Specimens of *Melon* apple were sent us this autumn by WM. R. SMITH, of Macedon, N. Y., who is familiar with all the finest standard apples grown in this country. In a subsequent letter, Mr. SMITH says, in reply to our high commenda-

tions of it—"It is difficult to form a correct judgment of a fruit from a few specimens. You need to be *domiciled* in its company for a month or more, to give time for the novelty to wear off, and to ascertain whether first impressions are permanent. We have been using this fine apple for some time; and, among a large variety of first rate kinds, we place this at the *head* of the list of *early winter* apples."

The oldest known trees of the Melon apple, are in the old Chapin orchard, East Bloomfield, N. Y. OLIVER CHAPIN, jr., has informed our correspondent just quoted, that his father used to say, that "the *kind* was brought from Salisbury, Connecticut." But, we understand, there is no fruit of this kind known in Connecticut; and from certain strong traits of resemblance between this and the *Northern Spy* apple, which originated in the Chapin orchard, we suspect that they are both seedlings from the same source.

The following is a correct description of the Melon apple:

Fruit of medium or large size, roundish-flattened, prettily regularly formed, surface shining, but a little uneven. Skin fair—the ground colour of a pale yellowish white, prettily marked with broken streaks of pale purple in the shade, and striped thickly with rich dark purple on the sunny side. Stalk about three-fourths of an inch long, rather slender, inserted in a wide round cavity, which is marked with greenish russet. Calyx closed, set in a deep basin, which is wide, finely plaited at the bottom. Flesh white, fine grained, at once crisp and

tender, and exceedingly juicy, (somewhat like a watermelon in these respects,) and with a remarkably refreshing, sprightly and delicious flavor—a fine mingling of sweet and acid. Core rather close; seeds rather small, broad and black. Season, October to December.

Altogether, we regard this fruit, in point of form, size, beauty, and refreshing delicious flavor, as one of the first dessert apples. Amateurs may, we presume, procure trees of Mr. SMITH, of Macedon, or ELWANGER & BARRY, of Rochester, N. Y.

II. THE TOMPKINS APPLE.

A large, handsome and productive autumn apple; superior in flavor to the

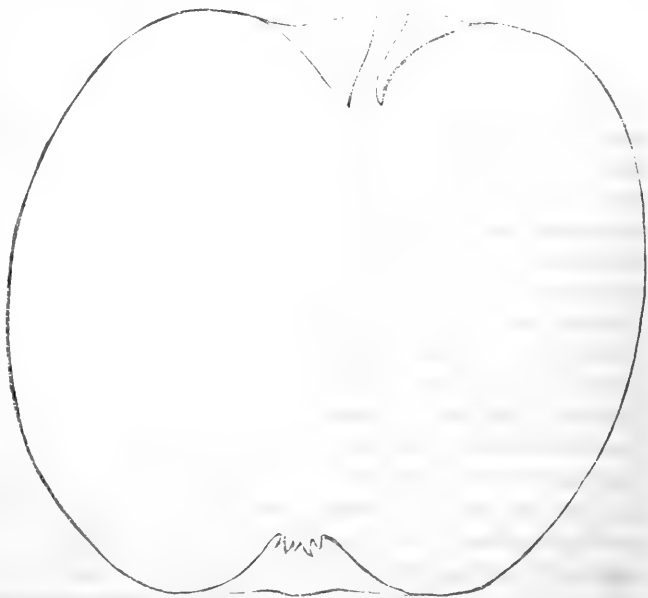


Fig. 45.—The Tompkins Apple.

Porter, and nearly equal in this respect to the Fall Pippin. It is, we learn, a native of Tompkins county, in this state, and is well known in Ithaca, whence it was first introduced to our notice by Mr. CHAS. HAMILTON, nurseryman, of Canterbury, Orange county, New-York. We commend it, with

confidence, to the notice of amateurs and collectors of good fruit.

Fruit large, oblong, rather angular, and slightly ribbed near the eye. Skin smooth, golden yellow at maturity, with numerous scattered gray dots. Stalk short, rather slender, planted in a cavity which is deep and rather narrow. Calyx small, closed, set in a deep, plaited basin. Core large, hollow, in which the small seeds rattle when the fruit is shaken. Flesh white, tender, of a lively, agreeable and rather rich sub-acid flavor. October and November.

III. THE BEURRE D'ANJOU PEAR.

A noble fruit, we believe of French origin. We gave a brief description of it in our work on Fruits, and remarked, that though placed as, perhaps, synonymous with the *Brown Beurré* by THOMPSON, it had been proved, in this country, to be quite distinct.

To the President of the Massachusetts Horticultural Society, we owe the first introduction of this fruit to American gardens. It has borne, in his collection, now for five years. We have, ourselves, tasted specimens three years successively; and can agree with Col. WILDER in considering

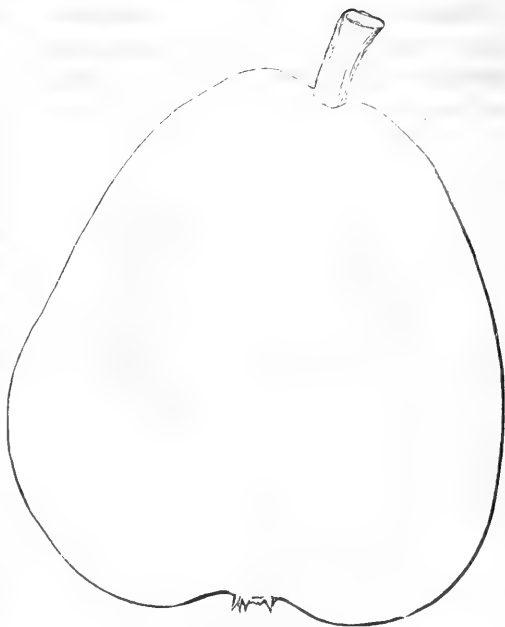


Fig. 46.—The Beurre d'Anjou Pear.

it one of the very finest new autumn pears that has yet been received from European collections. Its large size, productiveness, and the fair appearance, and delicious flavor of the fruit, cannot fail to make it worthy of a trial, even in small and select collections of fruit, in all parts of the country. It is in perfection in October and November; and the fruit keeps well.

NOTICES OF NEW OR RARE PLANTS.

FROM THE FOREIGN PERIODICALS.

THE gardening world is certainly indebted to Mr. ROBERT FORTUNE, the collector of the London Horticultural Society, for some of the most valuable acquisitions. First in universal value, among all the plants brought out by him from China, we may rank some hardy shrubs, which, having been distributed by the Horticultural So-

ciety, are now to be seen among the finest novelties of the shrubbery in England, and are just beginning to find their way to the United States. Of these the three following shrubs may be particularly recommended to the attention of our readers, as likely to prove exceedingly ornamental, and quite hardy in the latitude of New-York.

VIBURNUM MACROCEPHALUM. *Great clustered Snowball.* We find a description of this species, accompanied by a large plate, in VAN HOUTTE's *Flore des Serres*. It was



Fig. 47 — *Great Clustered Snow-ball.*

found growing in the gardens about Chusan, China, where it forms a shrub or tree 20 feet high. It flowers every year in May — producing its enormous clusters, which equal those of the old garden *Snow-ball*, or “*Guelder Rose*,” in purity of colour, and far eclipses them in size and beauty. Each blossom is more than an inch across, and the clusters measure 8 or 10 inches in diameter. The leaves are regularly oval, with short petioles, and are about 3 inches long. It flourishes in the open border in the same soil as the common *Snowball*, and M. VAN HOUTTE considers it one of the most beautiful additions lately made to the shrubbery.

FORSYTHIA VIRIDISSIMA. *The Deep-green*

Forsythia. This very ornamental shrub is a great favorite with the Chinese, and is found in all the gardens of the rich in the north of China. Mr. FORTUNE describes it as growing 8 or 10 feet high in that part of the Empire, forming a compact, deep-green, deciduous shrub, with long, opposite leaves, which emit a slight balsamic odour, and from their smoothness and rich, deep tint, are very handsome. It is remarkable in autumn for the number of large, prominent buds, which are scattered along the young shoots produced the summer before. Early in spring these buds, which are flower-buds, gradually unfold themselves, and present a profusion of bright yellow blossoms all over the shrub, which is highly ornamental. These golden flowers contrast happily with the rich crimson of the *Pyrus japonica*, as they bloom at the same time. It is easily propagated by cuttings or layers, and is a free growing plant in the open border.

WEIGELA ROSEA. *The Rose-colored Weigela.* This exquisite shrub is one of Mr. FORTUNE's prizes from the Mandarin's garden. We are very desirous to prove it in the United States, as we are confident, from its growing in the north of China, that it will prove quite hardy here. It has bloomed in the garden of the London Horticultural Society, and they have published a plate in their *Transactions*, (of which the accompanying cut is a diminished copy.) This plate represents it as bearing numerous clusters of lovely flowers, each blossom more than an inch in diameter, pure white within, and deep rose-colour without.

“When I first discovered this beautiful plant,” says Mr. FORTUNE, “it was growing in a Mandarin's garden, on the island of Chusan, and literally loaded with its fine rose-coloured flowers, which hung in



Fig. 48.—*The Rose-coloured Weigela.*

graceful bunches from the axils of the leaves and the ends of the branches. Every one saw and admired the beautiful *Weigela*. I immediately marked it as one of the finest plants of northern China, and determined to send plants of it home in every ship, until I should hear of its safe arrival.

"It forms a neat bush, not unlike a *Syringa* (*Philadelphus*) in habit, deciduous in winter, and flowering in the months of April and May. One great recommendation to it is, that it is a plant of the easiest cultivation. Cuttings strike readily any time during the winter and spring months, with ordinary attention, and the plant itself grows well in any common garden soil. It should be grown in this country, as it is in China, not tied up in that formal, unnatural way in which we frequently see plants brought to our exhibitions, but a main stem or two chosen for leaders, which, in their turn, throw out branches from their sides, and then, when the plant comes into bloom, the branches, which are loaded with beau-

tiful flowers, hang down in graceful and natural festoons."*

DIELYTRA SPECTABILIS. *Showy Fumitory.* This plant is, beyond all comparison, the handsomest of the natural order Fumeworts. It does not appear to have been introduced into England in a living state, until Mr. FORTUNE brought it home from China.

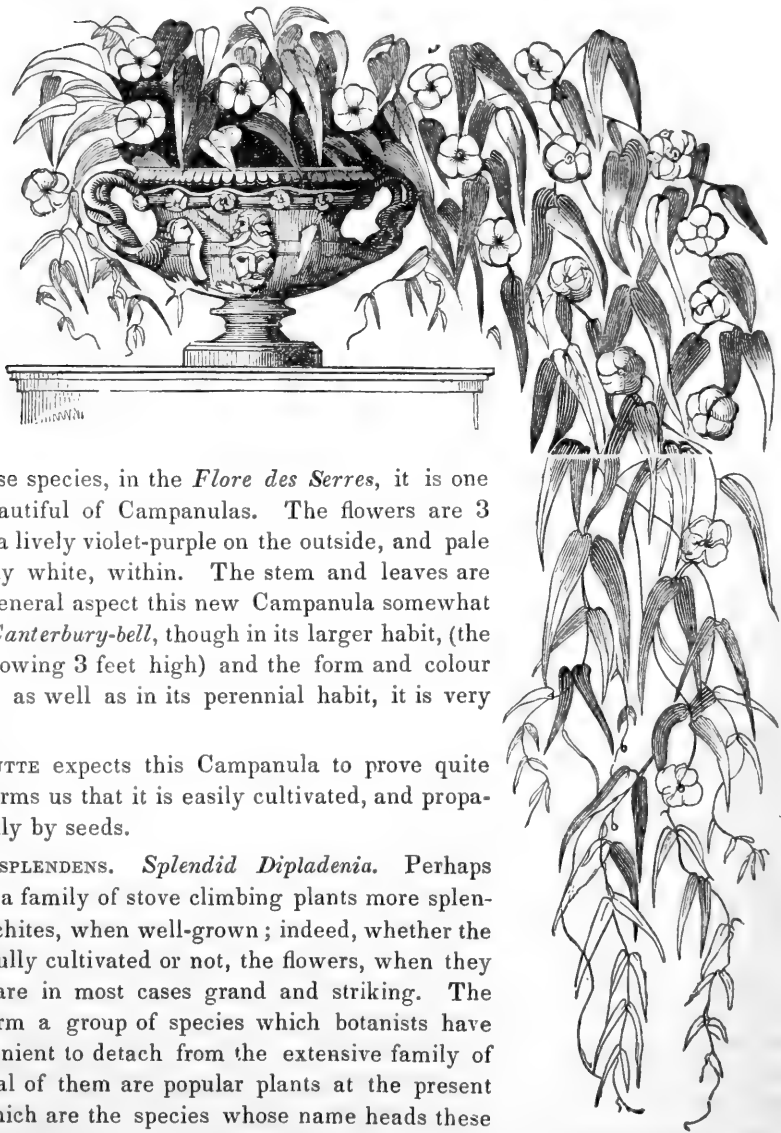
When well-grown, its stems are $1\frac{1}{2}$ foot high, and have three or four axillary racemes of beautiful flowers, each raceme being from 4 to 6 inches long. The flowers are full an inch long, and nearly $\frac{3}{4}$ wide, with two saccate petals, of a delicate rose colour, and the intervening ones white, with a purple tip.

This is one of the plants of which the Chinese Mandarins are so passionately fond, and which they cultivate with so much pride in their little fairy-like gardens. Its Chinese name is *Hon-pak-Moutan-wha*, or "red and white Flower of Moutan." The Chinese botanists do not draw the characters of their genera from the flowers like ourselves, but from the *habit* of the plant. In this the leaves are disposed like those of the Tree *Pæony*, (*P. Moutan*) and the colours of the flowers are red and white. The *Dielytra spectabilis*, more nearly resembles, in growth and culture, the well-known herbaceous plant, *D. formosa*, than any other species, but is a much more beautiful ornament to the flower garden.

As Mr. FORTUNE informs us that this charming plant grows as far north as the frontiers of Siberia, there can be no doubt that it will prove perfectly hardy in North America.

CAMPANULA NOBILIS. *The Noble Campanula.* Judging from the plate of this

* We trust that these three free-growing and very ornamental Chinese shrubs, the *Forsythia*, *Viburnum* and *Weigela*, will soon be propagated and offered for sale by our leading nurserymen. We observe that they are now to be had of the London commercial gardeners, at three shillings sterling each.—Ed.



fine new Chinese species, in the *Flore des Serres*, it is one of the most beautiful of Campanulas. The flowers are 3 inches long, of a lively violet-purple on the outside, and pale purple or nearly white, within. The stem and leaves are hairy, and in general aspect this new Campanula somewhat resembles the *Canterbury-bell*, though in its larger habit, (the flower-stalks growing 3 feet high) and the form and colour of its blossoms, as well as in its perennial habit, it is very distinct.

M. VAN HOUTTE expects this Campanula to prove quite hardy, and informs us that it is easily cultivated, and propagates itself easily by seeds.

DIPLADENIA SPLENDENS. *Splendid Dipladenia.* Perhaps there is hardly a family of stove climbing plants more splendid than the Echites, when well-grown; indeed, whether the plants are skilfully cultivated or not, the flowers, when they are produced, are in most cases grand and striking. The Dipladenias form a group of species which botanists have found it convenient to detach from the extensive family of Echites: several of them are popular plants at the present day, among which are the species whose name heads these remarks, (and which is—not well—represented in the engraving,) *D. crassinoda*, a good deal like it, but perhaps a better species on the whole for cultural purposes; and *D. atropurpurea*, which, with the same habit of growth, has flowers of a rich deep purplish tint.

Fig. 49.—*Splendid Dipladenia.*

Our present subject may be popularly described as follows:—Stem shrubby, vigorous, and growing to a considerable length, smooth, and round. Leaves nearly stalkless, wavy, somewhat leathery, elliptic-acuminate, with a heart-shaped base, from

four to eight inches long, and from one and a half to three inches broad; they are pubescent, especially on the under side, and the veining is prominent. Flowers very showy, in axillary four to six-flowered racemes, longer than the leaves; the tube of the corolla is about an inch and a half long, with a large spreading limb of five roundish, rose-coloured lobes, each having a small oblique point; these blossoms are produced in the summer months.

The species is a native of the Organ mountains of Brazil, from whence it appears to have been first obtained for our gardens by Mr. LÖBB, the botanical collector to Messrs. VEITCH, of Exeter: it was introduced about 1841. It belongs to the natural order Apocynaceæ.

In cultivation, this species of *Dipladenia*, in common with the others, requires stove temperature, and a moist atmosphere when making its growth; it is, moreover, much benefited by *mild* bottom heat, that is, heat applied to its roots. Being a strong grower, plenty of pot-room must be allowed to obtain a good plant, but the pots must be thoroughly drained; a compost of equal parts turfy loam and peat, opened if necessary by the addition of sand, will be a proper medium for its roots. If grown in a pot, spiral training round a pillar-trellis is most suitable; or should any devotee of flat, shield, or peacock's-tail trellises, become possessed of the plant under notice, if he will but attempt to train it over one or other of these forms—it may help to lead him to a better taste in this respect. It may be increased by cuttings, planted in sand and placed in a mild hotbed, where they may be kept moderately close until rooted. [*Hort. Mag.*]

PÆONIA MOUTAN PICTA. *The Painted Tree Pæony.* A new variety of the Tree Pæony, sent from China in 1844, by Mr.

FORTUNE. Leaves dull bluish-green, not veined or tinged with purple; in breadth, less than some varieties: flower, the size of *P. Moutan rosea*, and with something of its appearance, but more semi-double: petals with a rose-colored ground, streaked, stained and veined with rich deep rose, towards the edges, especially in the inside; rather ragged at the points, something in the manner of Parrot Tulips. It appears to be as hardy as *P. Moutan rosea*, and to require a rich sandy-loam to grow in, but protection is advisable in spring. It will be increased by grafting on the roots of *Pæonia albiflora*, or by dividing the old plants when large enough, and in a dormant state. *It is very handsome.* [*Journal of the London Hort. Soc.*]

HOLLBÖLLIA ACCUMINATA. This is a new evergreen twining plant, from the East Indies, with quite the habit of *H. latifolia*, from which it differs, in having very taper-pointed leaflets, racemes whose stalks are much shorter than the leaf-stalks, and purplish flowers, not half the size: like that plant, it is deliciously fragrant. Hitherto, only male flowers have been produced.

It has been treated as a hardy green-house climbing plant, but it is probably *hardy*. It grows freely in a mixture of sandy-loam and rough peat, and is increased by cuttings. Its sweet-scented flowers, resembling those of the orange in perfume, and nearly evergreen foliage, make it a very desirable plant, either in the green-house or the open air. [*Journal Hort. Soc.*]

THIBAUDIA PULCHERRIMA. *Beautiful Thibaudia.* This superb green-house plant, figured in the *Flore des Serres* for July, 1847, is well calculated to excite the admiration of all lovers of showy and half-hardy exotics. It is a vigorous growing shrub, with large and thick lanceolate leaves, and pale, smooth branches, which, at the flowering season, are thickly loaded or





Fig. 1.

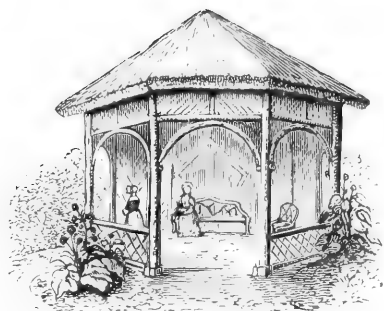


Fig. 2



Fig. 4.



Fig 3

DESIGNS FOR RUSTIC BUILDINGS.

[Hort: Feb., 1848.]

studded with clusters of beautiful bell-shaped flowers. Each of these flowers is an inch long, richly variegated and marked with crimson and pale green. The internal structure of the flower is both elegant and curious.

This plant comes from Northern India. VAN HOUTTE informs us that, planted out in a Camellia house, this plant, with him, two years planted, began to bloom in December, and furnished a succession of blossoms until the middle of April. "Planted out in the border of a conservatory, the *Thibaudia* will be one of its principal ornaments, both by the great number and the elegantly varied colour of its flowers."

LIEBIGIA SPECIOSA. *Elegant Liebigia.* This most elegant new plant, from Java, has been named in honour of Baron LIEBIG, the great chemist. It is a new genus—to the ordinary observer, something between a *Gloxinia* and a *Pentstemon*. The flowers are parti-coloured, pure white, exquisitely marked with deep blue, on the upper part of the corolla. The leaves are large, oblong, acuminate: the plant grows

quite erect, with a branching stem, and its handsome habit, and the great number of blossoms which it bears, in fascicles, at every joint, render it a very attractive object. It grows freely in rich soil, with the same culture as *Gesneras* and *Gloxinias*, and blooms during a considerable part of the season. We hope soon to hear of its introduction into the United States.

CEREUS GRANDIFLORUS MAYNARDI. *Maynard's Cereus.* A very fine new hybrid *Cereus*, raised in England, which we find figured in *Paxton's Magazine*. It is a true cross, obtained by fertilizing the pistil of *Cereus speciosissima*, with the pollen of *C. grandiflorus*, the Night-blooming *Cereus*. The properties of the two parents are strikingly embodied in the offspring—for Maynard's *Cereus* has the roundish stem and peculiar habit of growth of the Night-blooming *Cereus*, with the rich colour of its mother plant. Unlike the Night-blooming *Cereus*, and like *C. speciosissimus*, the flowers last several days; and they are produced in all the abundance which distinguishes the latter variety. The diameter of the flowers is nine or ten inches.

HINTS AND DESIGNS FOR RUSTIC BUILDINGS.

It must be a very highly finished scene, and a garden where all the details are in a very decided and ornate style of art, in which marble temples, statues, or even highly finished pavilions and summer-houses, may be introduced with harmony and propriety.

Hence, it is only in the first class of country residences, where the mansion or villa, and all its accessories, are in a high style of art, that classically embellished structures, or sculptural ornaments enter, with good taste, into the decoration of the garden or landscape scenery.

But the more humble and simple cottage grounds, the rural walks of the *ferme ornée*, and the modest garden of the suburban amateur, have also their ornamental objects and rural buildings—in their place, as charming and spirited as the more artistic embellishments which surround the palladian villa.

These are the seats, bowers, grottoes and arbors, of rustic work—than which nothing can be more easily and economically constructed, nor can add more to the rural or picturesque expression of the scene.

Those simple buildings, often construct-

ed only of a few logs and twisted limbs of trees, are in good keeping with the simplest or the grandest forms of nature. However wild the scene, wherever the foot-path of the rambler is seen, there the rustic seat is never obtrusive or unmeaning—in the quiet nooks of the garden, amid its flowers and shrubbery, the rustic-covered arbor, partly clothed with climbing plants, is an object of beauty. The terminus of a long walk, otherwise unmeaning, is in no way more easily rendered satisfactory and agreeable, than by a picturesque place of repose; and the charms of a commanding hill, where the eye wanders over a grand panorama, is rarely so happily improved, as by being crowned with a rustic pavilion, which seems as the shelter and resting place of modern Gilpins, “in search of the picturesque.”

The construction of ornamental rustic buildings is so easy, that any workman, accustomed to the use of the saw and hammer, may, with a little practice, soon become a “master builder.” The chief merit of these structures lies, of course, in the design or plan. As a contribution to the stock of ideas of the novice in rustic work, we have offered a few sketches in our Frontispiece of this month—all of which may be improved upon by the adept in rustic buildings.

Fig. 1, is a design for a **RUSTIC WELL-HOUSE**; *Fig. 2*, is an octagonal **RUSTIC PAVILION** for an eminence; *Fig. 3*, is a **RUSTIC ARBOR** for a nook in the shrubbery; and *Fig. 4*, is a **RUSTIC ALCOVE**, to be placed at the end of a garden walk.

Two or three practical hints here, may be found of service to the beginner. Most rustic work is quite perishable, when fully exposed to the action of the weather, and particularly to storms, in this climate. But if all buildings of this kind are protected by a *close roof*, that *projects* on all sides

from one to three feet, this rustic work will endure for many years in a perfect condition.

When rustic work is necessarily exposed to the weather, as in the case of open seats, bridges, and the like, the bark should be stripped from the branches composing it, and a couple of coats of *bark-coloured* paint applied to the surface of the limbs. What is still better, is to construct exposed pieces of rustic work of trunks and branches of the Red Cedar, (*Juniperus virginica*) a tree very common in the valley of the Hudson, and some other parts of the country. This, either with or without the bark, will endure many years.

The favorite mode of covering rustic buildings in England, is to *thatch* them with straw, (as represented in *Figs. 2* and *4*.) This, if neatly done, has a good effect. Another very picturesque roof, is made by overlaying a common roof of *matched* floor-plank, with pieces of oak or hemlock bark, as shown in *Fig. 3*. The rustic *well-house*, *Fig. 1*, is roofed with *shingles*, the lower ends of which are pointed before laying them on, so as to form a diamond pattern.

The “dead wall,” or interior portion of rustic buildings, is usually ornamented or finished by a sort of *mosaic work*, formed of small, strait poles, with the bark on; these poles are *halved*, and then nailed on a ground work of rough boards, with the bark side out. If poles of different species of trees, with strongly contrasting barks, such as the white and black birch, are chosen, and a little taste employed, a very pretty effect may be given to this kind of rustic inlaid work.

Another very complete mode of finishing the interior of a rustic building, is to line it throughout with the fine soft evergreen moss, to be found in thick woods. For this purpose, narrow, slender, strait poles or

shoots are chosen ; one of these is nailed on the ground work, a line or layer of the moss closely laid upon it, and one end rammed beneath it, the other projecting out beyond it ; then another rod is nailed down above this, and again a layer of moss. This is repeated till the surface to be covered is completed. The whole appears thickly tufted with moss, which is shorn to an even

surface, and being held in its place by the rods, it makes a very pretty and unique drapery for the walls.

In a country with the long winters of the Northern States, there are frequently leisure hours, when rustic work may form an agreeable occupation and amusement for the gardener ; and we leave the subject, with these few hints, in his own hands.

ON THE BLIGHTS OF THE PEAR TREE.

BY T. W. HARRIS, CAMBRIDGE, MASS.

It seems to have been taken for granted, by many persons, that the pear tree is subject only to one kind of blight. Hence have arisen the conflicting theories and speculations that have been published on this subject. Having no theory to maintain, and no speculations to offer, but such as are founded on facts, I propose to show that *insect-blight* is a disease distinct from *fire-blight* and *frozen sap-blight*.

By the term *insect-blight*, as here used, must be understood the sudden withering of the leaves, and the death of the limbs of the pear tree in summer, occasioned by the internal attacks of one or more of the insects, called *Scolytus Pyri* by Professor PECK. This kind of blight is common in New-England ; but it does not appear to exist, or to have been observed, in the western states, where, however, blights of the pear tree, somewhat similar in progress, and equally fatal in termination, prevail more or less every year. Blights, which are not the result of insect attacks, inasmuch as insects have never been detected in the blighted limbs, occasionally affect pear trees in New-England. Some of my own trees have been thereby destroyed ; and the most careful examination

has failed to disclose any trace of insect depredation in them. On the other hand, numerous opportunities for seeing the effects of insect blight, and of dissecting specimens of *Scolytus Pyri* from the blighted limbs, enable me to declare confidently that the diseases are specifically distinct from each other ; as much so as small-pox and measles. It is not my purpose to discuss the question, whether fire-blight and frozen sap-blight, or winter-blight, be identical ; the contrast between them and insect-blight being what is now to be attempted.

The effects of insect-blight begin to appear in June, and continue through July ; but the foundation of the disease may be traced to the operations of the parent insect during the previous summer. If all the limbs that were killed by insect-blight in the summer of 1847, could have been examined during the latter part of the summer of 1846, there would have been found insects in them, in the larva or grub state, eating their way from the buds, where the eggs were deposited, inwards, through the bark and sap wood. These insects continued the work of destruction till the following spring, when they were transformed to beetles, and finally came forth from their bur-

rows. The insects, therefore, preceded the appearance of the disease nearly a twelvemonth; from which follows the inevitable conclusion, that the blight of the limbs was the natural consequence of their previous attacks.

To suppose that the female *Scolytus Pyri*, by anticipation, deposits her eggs only on those limbs which are to become affected by fire-blight, or by frozen sap-blight, is unwarrantable; because none of these insects have been found in limbs that have perished by these kinds of blight, and consequently none could have existed in them during the previous summer. Hence, it follows that these blights are not caused by the attacks of *Scolytus Pyri*.

Observation sufficiently proves that this insect attacks young and thrifty trees, exhibiting no visible signs of disease or decay. As the young *Scolytus* is found in limbs that were apparently in a thrifty state during the previous summer, the parent insect, though not indued with the power to foresee frozen sap-blight during the following winter, or fire-blight the next summer, must have had some instinctive perception of the nature and actual condition of the tree on which she deposited her eggs; and, in performing this act, she would not have been left to blind chance. As the *Scolytus* lays her eggs on sound and thrifty limbs, it follows that she does so from choice; and, hence, it is fair to conclude that she would not voluntarily lay her eggs on unhealthy or diseased limbs, so long as she could find those that were healthy. Therefore, the opinion is untenable that the insects, found within the diseased limbs of the pear tree, are not the cause of the disease, but that they are attracted thither by the previous existence of the disease.

It should be remembered that the *Scolytus Pyri* requires a year, or thereabouts,

to complete its transformations. In those limbs that perished by insect-blight in the summer of 1847, the seeds of the fatal disease were sown by the parent *Scolytus*, in the summer of 1846. Those limbs that perished by fire-blight during the last summer, according to the theory of Mr. Cox and Mr. ERNST, must have been sun-struck during the same summer. Those limbs that perished by frozen sap-blight, according to the theory of Mr. BEECHER, had their death blow dealt to them during the previous winter. If the theories advanced by the above named gentlemen be correct, as to the time of attack, the specific difference in these three cases of disease is obvious. The occurrence of the insects in limbs destroyed by fire-blight, or frozen sap-blight, would be an exception to the natural order of things. But, even on the unproven and unnatural supposition that insect-blight might, for a time, coexist with other blights, it is evident that the attack of the insects must have preceded the disease. Insect-blight, therefore, differs essentially and specifically from fire-blight and frozen sap-blight, in origin and duration.

“What can we reason but from what we know.”

Had the history of the *Scolytus Pyri* been well known and duly considered, the blight produced by the attacks of the insect would never have been mistaken for fire-blight, or frozen sap-blight. The mistake has arisen from taking too much for granted, and from not considering the possibility or probability that diseases, having some symptoms in common, and alike ending fatally, might be really and essentially distinct from each other.

It may not be generally known that apple, apricot and plum trees are attacked by the *Scolytus Pyri*, though less frequently than pear trees. In the latter part of May,

1843, a piece of the limb of an apple tree, affected by the *Scolytus*, was brought to me for examination. It was twenty-eight inches in length, and three quarters of an inch in diameter at the lower end. Its surface bore the marks of twenty buds—thirteen of which were perforated by the insects; and, from the burrows within, I took twelve of the blight-beetles in a living state; the thirteenth having previously been cut out. In July, 1844, I took one of these beetles on a plum tree; and, in August following, I found a large number of them in some pieces of a blighted branch of the apricot.

To check the increase of this kind of insect-blight, it is not enough to cut off the infected limbs. The insects contained in these limbs must be destroyed; for, if they are suffered to make their escape, they will certainly continue to propagate the disease. To make sure of the destruction of the in-

sects, every limb affected by them should be cut off and immediately burned, as soon as the existence of the disease is discovered.

I am, dear sir, yours very truly,

THADDEUS W. M. HARRIS.

Cambridge, Mass., Jan. 7, 1848.

.....

[There is no vegetable malady in which the cultivator of fruit trees, in America, is so much interested at present as the pear tree blight. To wage successful war against it, nothing is so important as to have a clear and distinct idea of the different forms of the disease, and their origin.

The foregoing remarks, from Dr. Harris, whose able work on our "Insects Injurious to Vegetation," has established his reputation, not merely as a *scientific* entomologist, but one who labors to render science directly applicable to the daily requisitions of the cultivator of the soil, are most acceptable at the present moment. ED.]

ON THE CULTURE OF TALL OR CLIMBING ROSES.†

BY MR. A. FORSYTH, ALTON TOWERS, ENGLAND.*

If we wish to convey correct ideas of plants, we must adhere to botanical descriptions, and not to terms used in common conversation; for we find the term *tree* used in speaking of ligneous, herbaceous, and even annual plants. We have tree-pæony, tree-violet, and even tree-mignonette: no wonder, then, that we should have tree-roses.

The standard rose is generally termed a tree-rose; and, before we go further with the subject, it may be necessary to state, that "when the branches are perennial, and supported upon a trunk, a tree is said to be formed."†

If I recollect rightly, Loudon has somewhere set the boundary mark for a tree at from "four to six inches diameter, with a single bole or stem." Now there are rose-plants here with stems 6 inches in diameter; still

these dimensions do not constitute them rose-trees; for the common laurel will attain a diameter of six feet, and form an enormous head, yet the normal form of the laurel, as well as that of the rose, is decidedly a shrub; and accordingly in botanical works we find them constantly so named. The largest rose-plant to be met with, scarcely amounts to the character of a small tree, (*arbusculus*) by any reasonable stretch of courtesy. But I am reminded to get rose-plants with the appearance at least, and with the size of head of a tree, (arbor) aye, even of such a tree as the princely cedar, so graphically portrayed by Ezekiel in his vision of the fall of the kings of Egypt and Assyria; and if the fall of such a tree be terrible to behold, surely its standing clad with roses, would be majestic and goodly fair to see.

* From the Journal of the London Hort. Society.

† Lindley's Introduction to Botany.

The rose is unquestionably the most popular flower known, and its geographical range embraces, according to Loudon, (Arb. Brit.) Europe, and the temperate regions of Asia, Africa, and America: in all these it is said to be found wild, but not in Australia. Now I have it from an eye-witness,* that in the wilds of Australia the rose is seen in abundance, in the form of sweet-briar; it seems, therefore, to be as universally distributed as it is universally admired. From the language of holy writ it is clear that the rose was held in high esteem in the days of King Solomon; for if we compare the sentence, "I am the rose of Sharon," as rendered by King James' translators, with the same sentence in the Douay version of the Bible, "I am the flower of the field," and add the sentence, "I was exalted as a rose-plant in Jericho," (Eccles. xxiv. 18) we may conclude that in the valley of the Jordan there were fields of roses, and that the rose was there held in such favour as bordered on veneration, and this 3000 years before our day. In Geramb's Pilgrimage to Palestine in 1831, we find the following passages:—"The plain of Sharon which I traversed, so extolled in Scripture, was enamelled with flowers,"—"Rama, nearly on the borders of the plain of Sharon, is in a delightful situation,"—"The weather was brilliant, and reminded me of the beautiful spring days of Italy;" and farther on he adds, that in climbing the hills of Judea, "where there is not a trace of a road or of a plant save a few olive trees and some oaks, and these look as if scathed with the lightning; the eye, saddened with the sterility of the soil, needed some relief, and he turned from this scene of rocks piled one upon another, to look back at that beautiful plain of Sharon and the sea which bounds it." We may now see the force of the phrase in the inspired song, "I am the rose of Sharon;" for if Sharon be thus lovely in ruin and under oppression, and after earthquakes, plagues, and plunderings, surely its rosy morn and its palmy day must have been glorious.

The Romans are said to have rioted among roses, and throughout Christendom the rose has constantly been cultivated around the dwellings of both rich and poor.

We read glowing descriptions of "*Syria, land of roses*," yet we find, from the clearest evidence, that England boasts many a splendid rose, unknown and unsurpassed in Syria. The materials are in our own hands, and therefore there is no reasonable cause to hinder us from realizing fields of roses, aye, and trees of roses large as our wishes. I need not say that this cannot be accomplished if we are to confine our ideas of a rose-tree to the tuft of tiny rose-twigs on a dog-rose stem tied to an iron poker or a square stick, whose outline (especially in winter) resembles that of a besom, with the handle in the earth and the brush-part in the air.

Let no one imagine that I wish to speak slightly of the ordinary culture of roses. I only wish to push the subject far beyond its present limits, to carry roses into fresh pastures, and unite them to *living* stakes or props, as "vines are wedded to their elms" in Portugal and Spain.

The ivy, standing in its own strength, is but a sorry shrub, and when unassisted with props, or unattended with culture, it only creeps and clambers, a lowly, uninteresting evergreen, forming a monotonous mass of dense and dingy foliage, draining the earth of moisture and nourishment, and thereby starving outright every vegetable in its vicinity which it had failed to choke with its fleece of leaves; yet we find the ivy, as at Wrotham Park, for example, standing on the lawn supported by its own stem, and forming a fine globular head. There are ivy trees here 30 feet high, with a conical outline like that of the *Arbor vitæ*. These examples may show how the outlines and habits of plants may be altered by subjecting them to a particular mode of treatment in the training and propping. The honeysuckle, unassisted, is little to be admired in its squat and shapeless mass; yet every one will bear witness to its charms when seen in bloom entwined on tree or bower. A mountain ash in the grounds here has held up to admiration a plant of the honeysuckle high and wide for many years. A tall spruce fir propped for a long time another honeysuckle close to the above-mentioned specimen. I mention this evergreen tree with its honeysuckle to prove that

* Bishop Wilson, of Hobart Town.

climbers or twiners will live and flower among the spray of evergreen trees; and further, to show that this is not a new combination, I need only quote the couplet,

“Not a pine in my grove is there seen
But a woodbine entwines it around.”

Cottam and Hallen’s cast-iron rose-stake may be regarded as perhaps the most ornamental and economical *dead* prop in use. This elegant stake I quote here, that I may compare its cost with the price of those I am about to introduce, and likewise that we may continue its services to prop the tiny growing roses worked upon other rose-stems, in order to bring them near the eye, so that ladies may closely examine the rose without stooping, and without being tempted to pluck it; for of all the casualties to be guarded against, that of not leaving the rose upon its stem until the flower has faded is the most important. The price of this stake, six feet long, and strong in proportion to its length, is said to be 1s. 6½d. (*Encyclopædia of Gardening*.) The square heavy heart-of-oak stake, if sufficiently strong to be durable, and well painted, will cost little less than the iron one above quoted. The drawbacks to dead props are, first, the necessity for continual painting, then rust in the iron under ground, and rot in wood at the surface of the ground, the too slender form of the iron stake, and the unnatural square form of the wooden one, so much at variance with the nicely-balanced and symmetrical proportions of live timber, whose wooden trunks are never square like our wooden rose-prop, neither are they so *fine drawn* as the fashionable form of a standard rose with an iron prop.

The mountain-ash, when growing as a tree, is admirably suited to prop a climbing rose. Its foliage is pinnate, and not to be easily distinguished from the foliage of the rose; the colour of its trunk and that of the stem of the rose are the same ashy grey; in size, it is decidedly a small-growing tree; in habit it is stiff and formal, with spray full of antlers or little hooks, all tending upwards, just as if Dame Nature had made a tree of pegs to hang her rosy mantle on. Now the price of these living props, three feet high, is THREE FOR A PENNY, and six feet high, only a penny each. Good

plants of mountain-ash were delivered here, carriage paid, this season, at 25s. per 1000, three feet high, and larger sizes at 1d. each, as I have stated. Now, lest any one should imagine that I think of filling up a flower-garden with mountain-ash trees, I must beg leave to state, that where there is room for the rose-trees that I propose, there will be no lack of space for the stakes or props, for they will be within the rose-trees. These rose-trees were never intended for small gardens, and scarcely for large ones; they are the gigantic materials for fields of flowers high and wide, of long and deep avenues, the foreground figures fair and fragrant in the glades and dells of park scenery, where rides and drives invite. The bramble is another brother of the rose family, and this, as well as the mountain-ash, rambles at large by ravine and crag, growing freely in any reasonable situation, and in spots where neither grazing nor tillage can be carried on. Surely, then, we may reasonably hope to establish a climbing rose in a locality where two brothers of the same family already flourish.

The rose and its prop must be planted young in well-prepared earth; for, be it remembered, they will just grow and flower in proportion as they are fed, and therefore such a spread of foliage as is here expected requires something like a vine-border to give the necessary supplies of food, &c.

I do not write to please those parties who know so little of rose culture as to imagine that roses will not climb very high trees and flower freely. The *Rosa arvensis* climbs to the top of an arbor vitæ in the grounds here 20 or 30 feet, and its long and gracefully bending shoots may be seen dangling from the branches of high trees in the woods here and elsewhere. Loudon mentions (*Arb. Brit.*, p. 790) Eastwell Park, Pains Hill, Claremont, Pepperharrow, Spring Grove, and Fonthill, where similar specimens may be seen of *Rosa arvensis*, and particularly the Ayrshire and the evergreen roses, producing a fine effect, flowering, and even forming festoons among high trees. I need scarcely add, that in length and strength of vine many of the cultivated roses equal and even surpass the wild rose. I have seen climbing roses against a wall here and at

other places make shoots 20 feet long in a couple of seasons, and flower profusely; therefore, if the *Rosa arvensis* and its varieties climb trees of their own accord, surely art might train the twigs of other climbing roses in a track where nature unassisted prompts them to run. There is no plant of easier culture than the climbing rose; for all roses grow freely from cuttings, and thrive well in the common corn-land of the country, and even in places and soils where corn would scarcely be produced. They never fail running and flowering every year; and this running propensity, or, in other words, this truly desirable quick habit of growth, has hitherto caused this section of the rose family to be excluded from collections, or, if not excluded, to be unmercifully cut in, in order to keep them in bounds, which cutting, owing to the peculiar habits of this section of roses, amounts to nothing less than cutting off their heads; for if they are cut at all, the head or flowering part, being at the tip, is sure to be sacrificed, whether the cutting be only an inch or a pole in length. The climbing roses should either have a building to climb on, as a ruin, a bower, a wall, a trellis, &c., or, failing these, they may readily and cheaply be accommodated with a tree to climb for the small outlay of one penny. This arrangement is not confined to the culture of climbing roses only, but should extend to the culture of climbers of all kinds; for at the present time climbers cannot be grown in gardens, from sheer want of anything to climb upon. The grape-vine family, nearly all hardy, but seldom grown, produces the most beautiful foliage imaginable as a climber; but, alas! for lack of the prop, we lose the service of the vine. In an economical point of view the vine is worthy of a place with a tall yew hedge to back it, and, thus situated, something more than leaves would repay the planter. Any one who has eaten grapes cooked, even when not fully ripe, will allow that they are superior to any other tart-fruit, and, as they would come in late in autumn, could not fail to find a welcome at table when our native fruits were ripe or dead. The white bryony formed an object of the greatest beauty, growing up the face of a tall clipped yew hedge at Caenwood,

in the kitchen-garden. This plant attached itself by its tendrils to the hedge; and, as it belongs to Cucurbits, it gives an admirable lesson to cucumber growers, for it formed a perfect fan, with rays nine feet long, *without the aid of man*. The cucumber is a plant adapted by nature for a similar situation; for its beautiful tendrils tell that they were never made to crawl, but to climb. But I need not go farther than to the pea for an example of the value of living props: hundreds of persons would grow peas if they had sticks to prop them with. I saw a neighbor with a row of peas well sticked with a couple of rows of living beans, which by a special blunder had been sowed after the peas were covered with the soil.

The cultivation of climbers is a field too great to be entered upon here, and yet too important to be passed over in silence. I have therefore thrown out these hints in passing, and leave it to the lovers and admirers of this class of plants to carry it out, resting assured that the scarlet trumpets of that splendid climber, the trumpet-flowering honeysuckle, alone will proclaim by their few and feeble specimens the truth of what I am endeavouring to show, namely, that for want of a prop we lose the services of the most beautiful plants that could adorn a garden, ay, and the services too of valuable esculents. But to return to the rose. The umbrella form of trellis is well suited to show to advantage certain kinds of roses. Now the dwarf or weeping elm, engrafted on the common elm, forms an elegant head of this form; and, as these artificial drooping-headed trees are monsters, and grow slowly, they may be kept in dressed ground in small compass for many years. The one which I have before me has been four years planted; and one or two others, about ten years planted, have yet but very small heads. I may here mention that the young shoots of the elm resemble an immense pinnate leaf, and thus the leaf of the rose harmonises better with the foliage of the elm than I was led to expect before I made the comparison with the rose and elm twigs united.

The weeping ash makes an admirable trellis for a climbing, or rather a trailing rose, and having pinnate leaves, the harmony of the foliage with that of the rose is complete. Nothing but a figure drawn ac-

curately to a scale can give an idea of the excellent habit of this tree, standing as it does on a clean single stem, and forming a globular head with a fine bold outline, which may be varied by pruning to form an umbrella or semi-globular head, or may be allowed to feather down to the ground, and form an egg-shaped tent.

Every weeping tree gives the idea of being depressed, and its very name "weeping" implies a lack of comfort; therefore it should not be alone, but have a partner, whose rosy face should look upward, and at the same time look light and cheerful. To intertwine a weeping ash with roses would seem to mingle joy with its weeping, and make a striking contrast, since it could not fail to excite surprise to see a tree that usually hangs its head, and never shows a flower, come forth at last arrayed in such a bloom.

Various devices have been resorted to to hide the unsightly shank or stem of the standard rose, with more or less effect. I have sowed sweet peas around some, and planted other climbing plants round others, and have succeeded very well sometimes with such twiners as the ipomœas, &c., forming a cone of elegant flowers, and making the rose-stake serviceable to support a succession of flowers after the roses had faded. Still these creatures of a day, the ipomœas, &c., deserted me in my utmost need, for the least foul weather made them useless; and if they grew freely, they would not stop at any reasonable length, and, being so delicate when young, the smallest accident was sufficient to make a blank. The want of evergreens in a flower-garden in winter has long been felt, and, in short, to obtain a succession of beautiful living objects is the aim of every gardener in planting a garden.

Now in this garden there exists, whether by design or accident I know not, a thicket

of tall yew-trees, and in front of these some very tall rhododendrons, and drawn up between the yews and the rhododendrons there stands a fine rose-bush, and, after the rhododendrons have flowered and faded, the rose blooms in the face of this "dismal grove of sable yew." And it is to this contrast of bright rose-colour against dark green that I would invite notice: it sets off the rose to the greatest advantage, and always attracts attention, it being altogether unlooked for from such a sombre subject as the yew to wear a blush or other rosy hue upon its sullen face. Now, although the common yew-tree be well adapted to support a climbing or other rose, from its patiently enduring to be clipped or pruned into any reasonable or even unreasonable form, I would prefer the Irish yew, and make the head of the rose stand high enough to bloom above the yew. It is the ordinary system that nature follows to elevate the panicle or cluster of flowers of a plant above the foliage. By this combination we get rid of the unsightly rose-stake, by effectually hiding it in the thick foliage of the yew, and, instead of a leafless rose, with a long grey switch of a stem tied to round iron or square tree all the winter, we have an elegant evergreen tree, admirably suited to the stiff formal lines of geometrical flower-gardens; and surely a crown of roses, if properly worn, would set off to advantage the staid and sober virtues of the upright yew, neither would it derogate from its dignity thus to become handmaid to the queen of flowers.

The Robinia pseud-acacia, or common yellow locust-tree, having beautiful pinnate foliage, will make an admirable rose-tree; and the apple and pear-trees, beautiful and rosy in themselves both in flower and in fruit, in certain situations might be employed with excellent effect to prop roses.

CULTIVATION OF CRANBERRIES.—The Ohio Cultivator says that most of the experiments tried in that state, in the cultivation of cranberries, have not been attended with much success. Several cultivators have tried them on wet black muck, similar to their

natural soil; but the plants grow but little, and the grass and weeds soon get the mastery. The Yarmouth Register (Massachusetts) thinks that *damp, barren sands* is the only soil on which cranberries can be grown successfully.

THE MYSTERIES OF THE POULTRY YARD.*

[If among "rural arts," that somewhat difficult one of raising turkeys may be reckoned, then have we been unmindful of the interests of a certain class of our readers. To make amends, we serve them up to-day a piquant and complete article, by one who looks at the *basse-cour* with the eye of a philosopher.—ED.]

IF we call to mind the many and valuable acquisitions from both the animal and vegetable kingdom which have been made subservient to the use of man within comparatively a very recent period, it is not too much to believe that others, of nearly or quite equal value, still remain to reward the labor and pains of a persevering search. There is the whole of central Africa, central Australia, great part of China and northern India (which have already afforded us so much) and innumerable half-explored or unexplored islands, all waiting to be ransacked for our benefit. And without depending upon those distant regions, we know not yet what we may find at home; seeing that the delicious Seakale—an esculent whose merits are yet unknown to many a family of competent means living in retirement—has only within the last few years sprung up under our very feet; and the Capercali, by an easy importation, has been rescued from extinction in Great Britain.

Amongst the living tributaries to the luxury of man, the turkey is an example of the results yet to be expected from the exploring spirit of our day. It is the most recent, and, except the hen and the goose, the most valuable of our domesticated birds. We may, indeed, call it quite a new introduction; for what, after all, is a period of 300 years, compared with the time during which man has had dominion over the earth and its brute inhabitants? The obscurity which hangs over the transmission of the turkey from America, and which there is little chance of clearing away, except by industrious ferreting amongst old family records and memorandum books, shows that those who brought it to the old world had no idea of the value of what they were importing; but probably regarded it like any other remarkable production of nature—a macaw or a tortoise. The young would be distributed among friends with the same feeling that golden pheasants and such like are with us; these again would thrive and increase, and the nation would suddenly find itself in the possession of a race, not of pleasing pets, but of valuable, prolific, and hardy stock of poultry. Such I take to be the history of the turkey in England; and the Zoological and Ornithological Societies may hereafter find that some creature that was disregarded, or undervalued, or even yet unobtained, will prove unexpectedly

domestic and profitable (it may be the Cereopsis, some of the Indian Polyplectrons, or the elegant Honduras turkey;) to further which great object of their association they cannot do better than communicate spare specimens, on the most liberal and encouraging terms, to such persons as they believe competent fairly to test their value.

The varieties of the domesticated turkey are not very distinct. The most so is the Norfolk; the others may all be swept into what is called the Cambridge breed (thus including the bustard and Dutch copper-colored breeds,) which, however, is as much cultivated in Norfolk as the old local stock, and birds of which kind often pass for true Norfolks, because they have been procured from that county. The real Norfolk turkey is more hardy, but less ornamental than the others, and of smaller size. It is entirely black, except the red skin about the head, and a brownish tip to the feathers of the tail and some of those of the back. This gives the bird a rusty appearance, like an old piece of well-worn cotton velvet. The Cambridge sort, when black, have a beautifully shining bluish tinge, like a well-polished boot. The chicks of the Norfolks are black, with occasionally white patches about the head; those of the Cambridge variety are mottled all over with brownish grey, and are of taller and slenderer proportions. The white individuals of either variety are accidental; this color is scarcely permanent in their offspring; they are tender, not pleasing to every eye, and altogether not to be recommended. The plumage of the Cambridge breed varies very much; sometimes it is entirely made up of shades of reddish brown and grey, when it is called the bustard breed; sometimes of grey, black, and white, but frequently it approaches very nearly to what we see figured as the wild bird. In the "Naturalist's Library," the hen of the wild turkey, copied from Audubon, is represented with a hairy tuft like that of the cock hanging from her breast. I have not seen this in the tame variety. A hen in my possession that will be four years old next spring (1845) has no symptom of its appearance. The reason why the turkeys seen in our poultry yards do not vie in splendour of plumage with their untamed brethren is that we do not let them live long enough. A creature that does not attain its full growth till its fifth or sixth year, we kill at latest in the second, to the evident deterioration of our stock. But let three or four well-selected Cambridge turkeys be retained to their really adult state, and well fed meanwhile, and they will quite recompense their keeper by their beauty in full plumage, by their glancing hues of gilded green and purple, their lovely shades of brown, bronze and black, and the pearly lustre that radiates from their polished feathers. In default of wild specimens, birds like these are sought to complete collections of stuffed birds.

The demand for such large birds among the fowl-dealers, and the temptation to fat them before they arrive at this stage, are so great, that few

*From the London Agricultural Gazette.

farmer's wives can resist sending their 18 or 20 lb. "stag" * to market, while a young cock of the year, they think, will answer every purpose next spring as well. Some even deem it an extravagance to keep a turkey-cock at all, if they have not more than two hens, which they would send on a visit of a day or two to a neighbor who has a male bird. The time when the hens require this change of air in spring may be known by their lying down on the ground, as if they were unwell, doing so immediately again, if taken up and made to walk on, which apparent languor is accompanied by a lack-a-daisical love-sick expression of countenance. Last Christmas we ate or gave away all our turkeys (including a magnificent stag, whose image haunts us still) except one hen. The above mentioned plan was necessarily adopted, and the result was from 11 eggs, 8 chicks so strong as almost to rear themselves.

When the hen has once selected a spot for her nest, she will continue to lay there till the time of incubation, so that the eggs may be brought home from day to day, there being no need of a nest egg, as with the common fowl. She will lay from 15 to 20 eggs, more or less. Her determination to sit will be known by her constantly remaining on the nest, though empty; and as it is seldom in a position sufficiently secure against the weather or pilferers, a nest should be prepared for her by placing some straw, with her eggs, on the floor of a convenient out-house. She should then be brought home and gently and kindly placed upon it. It is a most pleasing sight to witness the satisfaction with which the bird takes to her long-lost eggs, turning them about, placing them with her bill in the most suitable positions, packing the straw tightly around and under them, and finally sinking upon them with the quiet joy of anticipated maternity.

Thirteen eggs are enough to give her; a large hen might cover more; but a few strong, well-hatched chicks are better than a large brood of weaklings, that have been delayed in the shell, perhaps 12 hours over the time, from insufficient warmth. At the end of a week it is usual to add two or three fowl's eggs, "to teach the young turkeys to peck." The plan is not a bad one; the activity of the chickens does stir up some emulation in their larger brethren; the eggs take but little room in the nest; and at the end of the summer you have two or three very fine fowls, all the plumper for the extra diet they have shared with the little turkeys.

Some ladies believe it necessary to turn the eggs once a day; but the hen does that herself many times a day. If the eggs are marked and you notice their position when she leaves the nest, you will never find them arranged in the same order. A person who obtained 99 chicks from 100 eggs, took the great trouble to turn every egg every day with her own hand, during the whole time of incubation. The result *appears* favorable; but, in fact, only amounts to this, that such officiousness did no harm with such a good, patient, quiet creature as the sitting turkey is, but it would probably have worried and annoyed any other bird into adding

her whole clutch. We will at once reject, as utterly absurd and unnatural, all directions to immerse or "try" the eggs in a pail of water, hot or cold.

In four weeks the little birds will be hatched; and then, how are they to be reared? Some books tell you to plunge them in cold water, to strengthen them: those that survive will certainly be hardy birds.* Others say, "make them swallow a whole pepper-corn;" which is as if we were to cram a London Pippin down the throat of a new-born babe. Others, again, say, "give them a little ale, beer or wine." We know unhappily that some mothers are wicked enough to give their infants gin, and we know the consequences.

Give them nothing; do nothing to them; let them be in the nest under the shelter of their mother's wings, at least eight or ten hours; if hatched in the afternoon till the following morning. Then place her on the grass, in the sun, under a roomy coop. If the weather be fine she may be stationed where you choose by a long piece of flannel tied round one leg, and fastened to a stump or a stone. But the boarded coop saves her ever-watchful anxiety from the dread of enemies above and behind—the carrion-crow, the hawk, the rat, the weasel; and also protects herself—she will protect her young—from the sudden showers of summer. Offer at first a few crumbs of bread; the little ones, for some hours, will be in no hurry to eat; but when they do begin, supply them constantly and abundantly with chopped egg, shreds of meat and fat, curd, boiled rice mixed with cress, lettuce, and the green of onions. Melted mutton suet poured over barley-meal, and cut up when cold; also bullock's liver boiled and minced, are excellent things. The quantity consumed costs nothing; the attention to supply it is everything.

The young of the turkey afford a remarkable instance of hereditary and transmitted habits. From having been tended for many generations with so much care, they appear naturally to expect it almost as soon as they are released from the shell. We are told that young pointers, the descendants of well-educated dogs, will point at the scent of game without any previous training; and so turkey chicks seem to wait for the attention of man before they can have any experience of the value or nature of those attentions. Food which they would refuse from a platter, they will peck greedily from

* Sir J. S. Sebright exposes the folly of endeavoring to make young creatures robust by undue exposure to cold and hardship, an experiment which some men and women are cruel enough to try upon their own offspring. Air and exercise increase the strength of any growing animal, but cold and hunger only dwarf and weaken. We see robust children in extremely poor families, not because they are poor, but because if they were not robust, they would not be alive at all. Sir John, in his "Treatise on improving the Breeds of Domestic Animals," pp. 15, 16, says, "In cold and barren countries no animals can live to the age of maturity but those that have strong constitutions; the weak and the unhealthy do not live to propagate their infirmities, as is too often the case with our domestic animals. To this I attribute the peculiar hardness of the horses, cattle, and sheep, bred in mountainous countries, more than to their having been inured to the severity of the climate; for our domestic animals do not become more hardy by being exposed, when young to cold and hunger; animals so treated will not, when arrived at the age of maturity, endure so much hardship as those who have been better kept in their infant state."

* In Norfolk, turkey-cocks are called stags from their second year upwards.

the palm of a hand ; a crumb which would be disdained if seen accidentally on the ground, will be relished from the tip of a finger. The proverb that "the master's eye fattens the horse," is applicable to them not in a metaphorical, but in a literal sense ; for they certainly take their food with a better appetite if their keeper stays to distribute it, and see them eat it, than if he merely set it down and left them to help themselves.

I believe this to be the case with more domesticated animals than we are aware of, and appears natural enough if we remember how much more we enjoy a meal in the society of those we love and respect, than if we partook of it in indifferent or disagreeable company.

However, there can be no doubt that young turkeys pampered and spoiled for about three hundred generations, have at length acquired an innate disposition to rely on the care of man. Sir Humphrey Davy, in his "*Salmonia*," believes that a like hereditary instinct is engendered even in fishes, believing that the trout, &c., in unfrequented rivers, are more unsuspicious of artificial flies than those in the streams of Great Britain. "This," he says, "may be fancy, yet I have referred it to a kind of hereditary disposition, which has been formed and transmitted from their progenitors."

At any rate, it is neither a dream nor a guess with young turkey-chicks, to which we will now return. A sitting of wild turkey's eggs does not often fall into the hands of an American game-keeper, if such a person there be, but I am afraid he would find his brood more shy and troublesome than the shyest of partridges or pheasants.

The turkeys, then, are hatched, and we are rearing them. Abundant food for the mother and her young, constant attention to their wants, are the grand desiderata. An open glade in a grove, with long grass, and shrubs here and there, is the best possible location. A great deal is said about clear and fresh water for fowls ; but I have observed that if left to their own choice, they will be as content and healthy with the rinsings of the scullery, or the muddiest pool, as with the purest spring. The long grass will afford them cover from the birds of prey ; the hen will herself drive off four-footed enemies with great courage. I have been amused with the fury with which a mother turkey has pursued a squirrel, till it took refuge in the branches overhead ; what instinctive fear urged her I know not. Insects, too, will abound in such a situation. When the little creatures are three or four days old, they will watch each fly that alights on a neighboring flower, fix it with mesmeric intensity, and by slow approach often succeed in their final rush. But in the best position you can station them, forget them not for one hour in the day. If you do, the little turkeys will for a time loudly yelp "*Ricordati di me*," "O then remember me," in notes less melodious than those of a *prima donna*, and then they will be sulky and silent. When you at length bring their delayed meal, some will eat, some will not. Those that will not, can only be saved by a method at all other times unjustifiable ; namely, by cramming ; but it must be done most gently. The soft crumb of bread rolled into miniature sausages, should be introduced till their crops

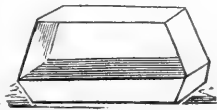
are full. For drink, many would give wine, I advise milk. The bird wants material, not stimulant. It has been actually wire-drawn. It has grown all the hours you have neglected it, without any thing to grow from. Like a young plant in the fine spring season, it will and must grow ; but it has no roots in the fertile earth to obtain incessant nourishment. The roots which supply its growth are in its stomach, which it is your office to replenish. Prevention is better than cure. Such a case ought never to occur in a well-cared for poultry-yard.

When two hens hatch at or near the same time, the two broods may be given to one mother, and the other hen turned out to range. If kept from the sound and sight of her little ones for a few days, she will not pine like the common hen, but will shortly recommence laying, and so produce a later hatch that will be very acceptable the following February and March. Sometimes two hens will choose to sit and lay in the same nest, like the wild birds mentioned by Audubon ; but it is better not permitted. They will not quarrel, but alternately steal each other's eggs, and run the chance of adding all. A frequent practice is to hatch spare turkeys' eggs under common hens. This answers well in fine dry summers, but not in wet cold seasons. The turkey-poults require to be brooded much longer than chickens ; the poor hen will be seen vainly endeavouring to shelter and warm young turkeys nearly as big as herself, till she gives up the task in despair, and leaves them to shift for themselves. It is better to transfer the chicks as soon as hatched to a turkey, and give the hen some fowl's eggs to go on with another three weeks. The improved and less rambling disposition of turkeys that have been reared by a hen is, unfortunately, all imagination, notwithstanding what Cobbett has so beautifully written on the subject. The instinct of the turkey is no more altered by this mode of education than the migrations of the cuckoo are checked by its being brought up by hedge-sparrow. The only way to keep turkeys from rambling, is to feed them well and regularly at home.

The time when the turkey hen may be allowed full liberty with her brood, depends so much on season, situation, &c., that it must be left to the exercise of the keeper's judgment. A safe rule may be fixed at the season called "shooting the red," a "disease," as some compilers are pleased to term it ; being about as much a disease as when the eldest son of the turkey's master and mistress shoots his beard. When young turkeys approach the size of a partridge, or before, the granular fleshy excrescences on the head and neck begin to appear ; soon after, the whole plumage, particularly the tail feathers, start into rapid growth, and the "disease" is only to be counteracted by liberal nourishment. If let loose at this time they will obtain much by foraging, and still be thankful for all you choose to give them. Caraway seeds, as a tonic, are a great secret with some professional people. They will doubtless be beneficial, if added to plenty of barley, boiled potatoes, chopped vegetables, and refuse meat. And now is the time that turkeys begin to be troublesome and voracious.

What can you expect else from a creature that is to grow from the size of a lark to 12 or 14 lbs. in eight or nine months? "Corn sacks, collars for oats, barn-swallowers, ill neighbors to Peasen," are epithets deservedly earned. They will jump into the potato ground, scratch the ridges on one side, eat every grub wireworm, or beetle that they find, and every half-grown potato. From thence they will proceed to the Swedes; before the bulbs are formed they will strip the green from the leaves, thereby checking the subsequent growth of the root. At a subsequent period they will do the same to the white turnips, and here and there take a piece out of the turnip itself. They are seldom large enough before harvest to make so much havoc among the standing corn, as cocks and hens and guinea-fowl, or they have not yet acquired the taste for it; but when the young wheat comes up in October and November, they will exhibit their graminivorous propensities, to the great disadvantage of the farmer. The farmer's wife sees them not, says nothing, but at Christmas boasts of the large amount of her turkey money. One great merit in old birds (besides their ornamental value, which is our special recommendation) is that in situations where nuts, acorns, and mast are to be had, they will lead off their brood to these, and comparatively (that is all) abstain from ravaging other crops. It is, therefore, not fair for a small occupier to be overstocked with turkeys (as is too often the case, and with other things also), and then to let them loose, like so many harpies, to devastate and plunder their neighbour's fields.

Soon after Michaelmas, it will be time to think of fattening a portion of them. Some families require turkeys very early in the season; but they are like every other immature production, inferior in quality. To eat turkey poult is a wasteful piece of luxury; those who order them are occasionally deceived by a small hen of the previous year. In the Roman markets hen turkeys sell for a bajocco (halfpenny) a pound more than the cock, and there are turkey butchers, of whom you may buy the half or a quarter of a bird. A hen will be five or six weeks in fattening, a large stag two months or longer, to bring him to his full weight. The best diet



is barley-meal mixed with water, given in troughs (see fig.) that have a flat board over them, to keep dirt from falling in. A turnip with the leaves attached, or a hearted cabbage, may now and then be thrown down to amuse them. Some use plain oats, but barley-meal is preferable, acting more quickly. Cramping is unnecessary, though it may hasten the process. When they have arrived at the desired degree of fatness, those which are not wanted for immediate use must have no more food given them than is just sufficient to keep them in that state, otherwise the flesh will become red and inflamed, and of course less palatable and wholesome. The turkey differs from the rest of our poultry in being fit for the table after its youth is past. Very few of the large turkeys that are brought to market are less than 18 months old; many are double that age. Nor are they the worse, provided the lady of the house be informed of the circumstance, and so enabled to leave a due interim between the killing and the cooking.

The hen turkey, contrary to the statements of some writers, does now and then erect her tail and strut like the male, and that, too, without any diminution of her feminine virtues. The manners of the cock are not prepossessing; he is vain, ungallant, careless of his young, a bully, though not always a coward, the most selfish creature in the poultry-yard, except the musk-drake, sometimes also apt to be seized with odd fancies that render him useless. Their supposed antipathy to the colour of red or scarlet, I believe to be an unfounded prejudice. They display less individual attachment to man than most other poultry, though they have equally, or more, thrown themselves on the protection of the race of mankind. They are called stupid, but mark the intelligence and amiability displayed by every look and action of a hen with her young. And yet little real alteration of her former manner is apparent. The strut that seemed foolishly pompous now strikes us as justly proud and cautious; the eye in which only affectation was apparent now glances with anxiety and beams with tenderness. The discordant voice has now an object in its call, and may be heard almost to whisper in subdued notes of gentle affection. Thus even, in the poor bird that we rear, admire and kill, a higher charm and elevation is added by the exercise of those holy affections which the beneficent Creator of all has given us for our comfort.—D.

REVIEW.

A DISCOURSE, delivered at the Plymouth Church, Brooklyn, N. Y.; by HENRY WARD BEECHER. New-York: published by Cady & Burgess, 60 John street.

RARELY have we perused a pamphlet with greater intellectual or moral gratification, than this—a Thanksgiving Discourse—by that able and eloquent man, Mr. BEECHER.

It is a discourse which every patriot should read, for it will exhibit to him the true greatness of his country: which every farmer should read, for it will cause him to thank Heaven for the lot in which his life is cast; and which every American should read, that he may learn the value of the

national blessings that surround, and the danger of the national evils that threaten him.

Mr. BEECHER's genius, appears to us to be in the clearness and the breadth of his vision, as a man and a teacher. Looking at humanity and the age, his glance is neither disturbed by the cloud of ancient dogmas that rises from the past and overshadows our horizon, nor the bright and captivating gleams of new light that irradiate and beckon us forward to the future. He is not only a profound thinker, and a most earnest and zealous expounder of truth, but *a man of his time*—who utters the thoughts, and interprets the language, of the great struggling heart of the nineteenth century; and especially of the Anglo-American race, boldly and significantly;—and this, too, while so many are fondly endeavouring to maintain an appearance of life, in ideas whose vitality has long since departed, or to galvanize into a premature existence new ones, for which neither our people or the time is ready.

In the discourse before us, Mr. BEECHER discusses the blessings which flow from our condition, our institutions, and our voluntary exertions as a people. It is neither our purpose, nor the province of this Journal, to pursue him in all the different divisions of his subject, though we heartily commend them to perusal. But one of these topics, *the value of our agricultural position*, is so admirably treated, and so pertinent to our readers, that we are confident they will all thank us for reprinting it in these pages:

We do not enough reflect how much of our prosperity arises from the possession of such and so much SOIL.

It is difficult for the imagination to conceive of its extent, its variety, and its capacity. Books may detail its bounds, and travellers recite its wonders; but it is not until the eye has beheld, and the feet,

through many a parallel, have traversed woodland and prairie, hill-country and river-valle, stretching for thousands of miles, that one begins to feel the magnitude of our territory. So far does it reach toward the pole that summer smiles faintly and but briefly upon its northern limit; while its southern limit, pushing toward the tropics, is seldom cooled by winter frosts. So far is the east removed from the west, that they have neither morning nor evening together; and their harbors look out upon different oceans, upon opposite sides of the globe.*

A pure religion and liberal civil institutions, would have done much for us; but it has been the accident of an abundant soil which has given them so fair a field. Men have found room to move as religious liberty inspired them, without lifting or fighting a thousand superimposed customs. Religion and liberal influences, in Europe, have been like winds upon ships embayed or threading narrow channels; which, though they urged them forward, drove them at every furlong toward shoals or rocks of old customs and laws. But we have had the broad ocean. Let us examine more in detail the influence of ample soil upon national character and prosperity.

There is no pursuit which more directly

* If a million of people should annually pour into the single State of Indiana, for fifteen years, the soil could sustain them. I shall be thought extravagant by those only who have not reflected, when I say, that, if not a kernel of grain were raised in any other State in the Union. Indiana, if put to its full capacity, could easily supply every one. At twenty bushels to the acre, Indiana might yield, if wholly tilled, an annual crop of 500,000,000 bushels of wheat. If Illinois were to yield only Indian corn, at the rate of fifty bushels per acre, her annual crop of Maize might become 1,920,000,000 bushels! These two States alone *might* annually supply twenty millions of people, respectively, with twenty-five bushels of wheat per head, and nearly one hundred bushels of corn. It is manifest, that this supply is so greatly above the want, that it might be reduced in favor of all other produce, needed for the sustenance and comfort of men and beasts. The absolute capacity of an acre of soil has never yet been tested. The nearest approximation has been made under the allotment system of Great Britain, the soil being cultivated entirely by the spade. From some estimates founded upon the results of that system, it is not wide of the truth to say that Indiana, upon her 23,000,000 acres, *could* sustain a population of 90,000,000! That it would be desirable to crowd the soil so near to its extreme capacity is far from being proved, except as the less of two evils, as amidst the redundant population of Europe.

conduces to health, industry, sobriety, temperance, personal independence, and political stability, than husbandry. Since the world began, the soil has been the mother and nurse of sound and healthy-hearted men; and cities are only saved from physical degeneracy, by large annual drafts from the rural population.

The effects of sound health and of particular occupations upon morals, is great. Pursuits which thrive by competition, sharpen men's wits, and give force to enterprise; but too often, at the expense of simplicity, truthfulness, and sensitiveness to honor and integrity.

More than anywhere else, men are trained on the soil to industry, self-reliance, and enterprise, without paying for prosperity by their morals. While the farm underlays all commercial and manufacturing interests, and by its products maintains all other forms of industry, yet, after all, its best crop is the men it yields.

In other pursuits men may be men. Other avocations enlarge the understanding, task the ingenuity, grind off the roughness of nature, and give polish and beauty. But there is not another department of society which enables *so many* men to live as *independent principals*. In almost all other pursuits men are, as employers and employed, woven into the fabric, so that no thread can be separated without violence to the whole. The mechanic, honorable and useful, is affiliated to others for livelihood, and to some extent must fluctuate with them. The clothier cannot eat his fabrics, nor the carpenter wear his structures, nor the mason sleep upon his brick and mortar, nor the smith feed hungry mouths from his anvil. These are all grouped together in interdependence. They are not the separate trees of the forest, each growing by its own root; but they are those trees felled, squared, morticed and fitted together.

The husbandman alone can find in his province the elements of living—food, raiment, shelter, and the raw material for almost every physical want. Other processes augment the value of these rude elements. But if worse comes to worst, the farmer can best live within himself. The disasters of speculation; the flux and reflux of

commerce; the sharp competition of traffickers; the feverish ambition, and the unwholesome public morals—courage without conscience, and seldom conscience with courage, enterprise without scruple, plausible avarice, sleek and greedy dishonesties, circumspect deceptions, religion in form and depravity in fact—these are not the offspring of the soil, but of the street, the exchange, the shop, the office, and the store.*

Any land that has a large proportion of its citizens upon the soil, will not, in emergency, lack sturdy men. Nor will their influence stop within themselves; for, as an ice-mountain cools the sea and air for many a league around it, so a vast substratum of temperate, healthy-minded, industrious men, will send up a powerful though imperceptible influence into all the superincumbent classes of society.

The effect upon the character of being a subordinate or a principal is great. In a sense of responsibility, in taxation of intellect, in providence, in making provision for others; in short, in *developing* the man, by putting him upon his own foundation, and both tempting and compelling him to work by his own head, his own hands;—to be fertile in invention, to provide means for the execution of plans; to forecast, arrange, and discriminate for himself,—in all these respects, what other vocation has such power as that of husbandry?

Europeans, naturally, on hearing of the looseness and casual lawlessness of new settlements; of riots or brutal encounters; of immense excitements in political campaigns, believe, either that we must soon

* It may be, that, in a better state of things than now exists, a separate estate may not be deemed so great a good as it now is; or interdependence be subject to such or so many ills. But whatever union may be desirable, it should be the union of independent men; nor should it ever destroy their individuality, or self-reliance, or self-development. It is union of strength that begets strength, not the grouping of imbecile dependence. While it is the duty of the strong to bear with the weak, it is the duty of the community to multiply the number of its strong and to diminish the number of its weak. What problem a future day and crowded population may have to solve, we know not. But in our day it is manifest that men would be made or saved, if our cities could be swept with a besom, and hundreds of thousands of lilly hands made acquainted with the plow, and thousands of necessitous expectants dispossessed of a mean shame for honest labor and self-earned livelihood.

come under coercive restraint, or go to pieces. The prediction would be true of any other people. It would be true of us if so large a portion of our new population were not independent land-holders. They are not like European peasants, trained to work under the direction of other minds, and made dizzy the moment they are left to their own; but are trained from boyhood to act under the guidance of their own judgment, without easing themselves by leaning upon others. Excitement may make them drunk for a night, but reason and repentance come with the morning. That very freedom which provokes to irregular action, also limits its evils. A freshet only *inundates* the level country, in which rivers have a wide vale on either hand; but rends and tears with irrepressible force when pent up in narrow limits. It is not the loss of popular equilibrium that is dangerous, but the want of elasticity to recover it again. A marble column, if bent by the tornado, falls; the tree, springs back again. When was there ever such a blow dealt upon a people, as we have received from the commercial embarrassments of the last ten years? Trade almost ceased. In many portions of the land money was unknown and barter was universal. There was sale for almost nothing that the soil produced; the plow rusted, the fat ox, unyoked, wrought no more, nor went bellowing to any market, where nothing could be had for beef, bone, hide, or tallow. It was during such a prostration (as tornadoes are engendered in barren and parched deserts,) that the political contests of singular power and excitement were bred which swept over the land. Close upon this, as if evoked from the vast and gloomy cave of storms, came stalking the gaurt and hideous spectre of Repudiation. Its brood came too, stay laws, bankrupt laws, valuation laws. What a condition was this. In our vast agricultural basin were poured together the thousands and millions of discordant, heterogeneous emigrants from every quarter of the globe. Before they had taken root, in the midst of half-cleared farms, upon villages of log-cabins, came in one storm, commercial disasters, political convulsions, state and personal bankruptcies. What

has been the issue? A night of horrid storms has shut in upon a gallant ship, and the last light disclosed her amid dangerous currents and sinuous channels. We wait for morning, sure that she has gone to pieces. The storm has lulled, the sun comes up clearly; we hasten to the shore to find the masts, spars, and drowned mariners; when lo! there she rides before our eyes, some sails rent, some spars gone, but victorious over the storm, and seeking with full canvas the now open harbor.

Out of all these fierce dangers our rural population have come forth, more industrious, more circumspect of debt, more frugal, more independent and self-sustained.

The exuberance and abundance of our soil makes personal want, to any extent, a result of gross criminality, and public suffering from poverty almost impossible.

So vast is our territory—stretching thro' so many zones—that never is there a similar season common to all. If the winter is rigorous in New-England, it is often mild on the Mississippi. If drouth parches the farms of the North, the streams of the South are often overflowing with prodigal waters. In smaller territories, as in Great Britain, a season which dries up the resources of one portion, cripples all. But with us, the mischiefs of the worst season are partial; there is a good season in some part of our domain; and the abundance of other latitudes in our own land, flows in by ready commerce to relieve the want.

Nor is it a matter unworthy of regard that soil, climate, and the habits of our people, multiply the varieties of product on every farm, beyond what is elsewhere known. In Ireland vast masses of people lived upon one esculent, and that the cheapest. If any crisis occurred, being already at the bottom of the scale, there was no room for change. When a plague smote the potato-field, there was nothing left; there was nothing so cheap; nothing so abundant as the potato; no poorer food below it; no place of temporary retreat; nothing but the abyss of starvation.

But if our wheat fails, how many grains stand ready to compensate. There are six or eight staple articles *below* wheat (which

is the universal edible,) from one to another of which we can retreat if disaster falls upon our harvest fields. In short, the abundance of soil puts the average distance between ordinary plenty and want at so many degrees, that famine is a thing hardly possible in America. Indeed, we are to the world what Sicily was to Italy; what Egypt was to Canaan.

No words can ever convey a measure of this blessing to our understanding. We have never felt famine; never seen wasting men and pining children, in supplicating agony for a morsel of bread to expel from the stomach the torments of hunger. We have never wandered on the beach to search for bitter roots, nor parted the spoils of the forest with the swine. Because we have always had abundance, it seems no peculiar blessing more than the air which we breathe, the water that we drink. But, oh, of what value is one poor gasp to a dy-

ing man! How precious one drop of water in a burning desert!

If we except one or two small territories, the United States is the only place on earth where all, down to the very bottom of society, are *fully fed and well clothed*. We are to remember that our abundance is not extraordinary; contrariwise, it must annually increase. As more land is reduced to tillage, as every part of it is better cultivated, as science more thoroughly directs the farmer's hand, and new instruments of agriculture are invented, the harvests must wave broader and heavier, the scythe and the sickle grow brighter in the long labor, and the barn and granary, overcharged, refuse to hoard the immoderate abundance of the soil.

The world is to be fed at our hands. And famine shall be borne away, as a bird of prey upon a mighty wind, when the songs and shouts of our harvest-fields shall roll over the abodes of foreign wretchedness.

FOREIGN NOTICES.

CHINESE AGRICULTURE.—Much has been written in praise of Chinese Agriculture. No doubt they have been diligent cultivators of the soil from a remote period; and some centuries ago, when their agricultural and gardening operations were viewed by Europeans, they appeared to be superior to much that was practiced in the West. But like all their other habits and arts, agriculture has been, and still continues stationary amongst the Chinese; while in Europe, and in Britain especially, it has made great advances. The consequence is, that Chinese agriculture, as compared to British, is now far behind. It evidently appears a mistaken notion, too, which we have all along adopted, that every acre and inch of land in China is under a state of high cultivation. It is true that the level plains and hills of moderate height, are all under cultivation, and especially so in the neighborhood of cities. But Mr. Fortune, in his botanical excursions, roamed for many miles over mountains and ravines that were still in a state of nature; some of the hills were perfectly bare and rocky, and destitute of all vegetation; and others were covered with wild plants and brushwood. The houses of the peasantry and small farmers were also of a very mean description, built of mud and stones, with mud floors and very few domestic conveniences. The agricultural implements are of the simplest kind, and not in the very best condition; in short, every thing betraying a state of matters somewhat similar to what prevailed in Scotland some fifty years ago, when agriculture had not generally attained that perfection to which it has now

arrived with us. The generally fertile soil, however, the favorable climate, and the really industrious habits of the people, are all conducive to an abundant production of the fruits of the earth over the whole extent of the country.

Rice is the staple production in all the valleys of the warmer southern provinces. As it forms a chief article of food among the Chinese, its cultivation is extensive. In the south, two crops of this grain are raised in the hot months, besides a crop of some more hardy vegetable in winter. The ground is prepared in spring for the first crop of rice, as soon as the winter grain crops are removed from the fields. The plough, which is commonly drawn by a buffalo or bullock, is a rude instrument, but light, and perhaps more suited to the kind of work than the British plough, which has been tried and found too heavy and unmanageable. As the land is always flooded with water before it is plowed, this process consists in turning up a layer of mud and water six or eight inches deep, which lies on a solid floor of hard stiff clay. The plough never goes deeper than this mud and water, so that the ploughman and his bullock, in wading through the field, find a solid footing at this depth below the surface. The water buffalo, generally employed at the south, is well adapted for this work, as he delights to wallow amongst the mud, and is often found swimming and amusing himself in the canals on the sides of the rice fields. But it must be an unhealthy operation for the poor laborer, who, nevertheless, pursues it cheerfully, and apparently happy. After the plough comes a harrow, without

long teeth like ours. The laborer stands upon the top of it, and its use is to break down and pulverise the surface of the muddy soil, and to press in the manure. Previously to the preparation of the fields, the rice seed is sown thickly in small patches of highly manured ground, and the young plants in these seed beds are ready for transplanting when the fields are in a fit state to receive them. Sometimes, especially in the south, the seeds are previously steeped in liquid manure. The seedling plants are carefully dug up from the bed, and removed to the fields. The fields are now smooth and overflowed with water to the depth of three inches. The operation of planting is performed with great rapidity. A laborer takes a quantity of plants under his left arm, and drops them in bundles over the land about to be planted, as he knows almost to a plant what number will be required. These bundles are then taken up in succession. A dozen plants are selected at a time, and plunged by the hand into the muddy soil. The water, when the hand is drawn up, immediately rushes into the hole, and carries with it a portion of soil to cover the roots, and the seedlings are thus planted and covered in without further trouble. In the south, the first crop is fit to cut by the end of June or the beginning of July. Before it is quite ripe, another crop of seedlings is raised in the beds or corners of the fields, and is ready for transplanting as soon as the ground has been ploughed up and prepared for their reception. This second crop is ready for cutting in November. In the north, where the summer is shorter, a different plan is followed. The farmers here plant a second crop two or three weeks after the first, in alternate rows. The first planting takes place about the middle of May, and the crop is reaped about the beginning of August. After the early crop is removed, the ground is stirred up and manured, and the second crop comes to maturity about the middle of November. In the Shanghai district, the summers are too short to get two crops of rice, but an autumn crop of vegetables is not unfrequent. Rain falls in great abundance during the change of the monsoon in May, and the Chinese are very expert at irrigation, so that during the growth of the rice, the fields are flooded with water. The terraced bases and sides of the hills are supplied with water by mountain streams, and the valleys by canals, the water being raised by a simple but very effective water wheel. The mountain terraces, which rise one above another like the steps of a stair, are so constructed both for facilitating the process of irrigation, and for preventing the mountain torrents from washing down the soil. *North British Review.*

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NANKING COTTON-GROWING.—The Chinese or Nanking Cotton plant—the *Gossypium herbaceum* of botanists, and the *Mie wha* of the northern Chinese—is a branching annual, growing from one to three feet in height, according to the richness of the soil, and flowering from August to October. The flowers are of a dingy yellow colour, and remain expanded only for a few hours. They are followed by the seed pod which swells rapidly, and when ripe, the outer coating bursts, and exposes the pure white cotton, in which the seeds of the

plant lie imbedded. The yellow cotton, from which the beautiful Nanking cloth is made, is called "*Tze-mie-wha*," and differs little, except in color, from the other variety. The latter is chiefly cultivated in level ground, around Shanghai, in a strong rich loamy soil, capable of yielding immense crops year after year, although it receives but a small portion of manure. Early in spring, the cotton grounds are ploughed up, and manured with a rich mud dug from the drains and ditches. In the end of April or beginning of May, the cotton seed is sown, generally in broadcast, and trodden by the feet of laborers into the soil. The spring rains now commence, and the vegetation of the cotton makes rapid progress. During the summer months, the plants are carefully thinned and hoed. Much now depends on the season. If dry, the plants are stunted; but if refreshing rains fall, the crop proves a good one. The cotton plant produces its flowers in succession, from August to the end of October, and even in mild seasons, during November. As a succession of pods burst every day, it is necessary to have them gathered with great regularity, otherwise they fall upon the ground, and are spoiled. Little bands of the Chinese are now seen in the afternoon in every field, gathering the ripe cotton, and carrying it home to the houses of the farmers. As the farms are generally small, they are worked almost entirely by the farmer and his family, consisting sometimes of three or even four generations, including the old grey-haired grandfather, or great-grandfather, who has seen the crops of fourscore years gathered into his barns. Every member of such group has a certain degree of interest in his employment. The harvest is their own, and the more productive it is, the greater number of comforts they will be able to afford. In such a delicate article as cotton, much of the success of the crop depends upon a dry and mild autumn; for wet and cold are both inimical to it. When the cotton crop is brought from the field, it is spread out to dry, and then it undergoes a process to separate the seeds, which is done by passing it through a machine with two rollers. It is then put into bags, which, slung across a bamboo stick, are thus carried into the towns on the shoulders of the farmers, and disposed of to the cotton merchant. Every family retains a portion of the produce for its own use, and this the female members clean, spin and weave at home. The spinning-wheel and the hand-loom, both once so common in this country, are still in use in China, and to be seen in every village in the cotton districts. The cotton stalks are used as fuel, the refuse as manure, and the cleared fields are immediately planted with clover, beans or other vegetables for a second crop. *Ibid.*

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TO DESTROY MOLES.—I recently met with an efficacious mode of destroying moles. The directions I am about to give appeared in the form of a letter, in the "*Sportsman's Magazine*," a very creditable London periodical. The letter is short, so I quote it entire:—

"SIR—A correspondent of yours, some weeks since, put a query on this subject, which I have not seen answered, and perhaps you will find a corner for the following. I will answer for its efficacy.

"Take a quantity of fresh [earth] worms, put them into a wooden box, with a small quantity of carbonate of barytes in powder, and let them remain for an hour or two: then find out the runs where the moles leave the fences for the land, lay in every run five or six worms, and continue doing so as long as the worms are carried away by the moles. I was infested with moles before I used this remedy, which was about fifteen years since, but have never been injured since, by giving a little attention to them in the spring."

I communicated the above remedy to an English friend, and he has written to me, confirming its entire efficacy.—*Richardson's Pests of the Farm.*

TO PROTECT TREES AGAINST HARES AND RABBITS.—For years I have suffered by the destruction committed by these vermin among my apple trees: unless painted every year with train oil and hogs' lard, mixed over the fire to the consistence of paste, many thousands of my trees would have been destroyed. The above I have found the only efficient composition, after many trials of others recommended. The oil is injurious to trees, but the lard neutralizes its bad effect, and appears to prevent its penetrating the bark; still, the trouble of having 20,000 apple trees painted with a brush by boys, was very great; and I felt much pleased when visiting Mr. Dillistone last autumn, to learn from him that sundry pieces of rags tied to sticks, which I observed in his nursery, and about which I was inquiring, were sulphured rags, which had protected his trees from hares and rabbits, all the preceding winter. I must confess, however, that I felt incredulous, observing at the same time that, surrounded as I am by preserves, if they would protect my trees, I should feel perfectly convinced of their efficacy. In November last, I purchased a quantity of sulphur, collected sundry pieces of rags, which were cut into slips nine inches by six; these were put into cleft sticks (about two feet in length,) dipped into the melted sulphur, and the sticks with their miniature flags stuck into the earth so as to stand about eighteen inches out of the ground, round the quarters of apple trees, about three yards apart. Now for the result. We have had much sharp weather, in which hares and rabbits are generally very destructive, but not a single tree has been touched in those quarters surrounded by my flags of sulphur. Some straggling unprotected trees have been completely gnawed round, and in particular one solitary row of apple trees, which was forgotten, was entirely destroyed. I have, therefore, strong hopes that I shall never more have occasion to smear my trees with oil and grease, and other compositions, all of which are, to a certain degree, injurious; for oil, even when mixed with lard, often forms a coat over the buds on the young shoots, and prevents their breaking kindly. I have, in by-gone years, destroyed in my nursery more than three hundred hares and rabbits in one season. I have reason to be grateful for such a simple and efficacious mode of protection from their ravages.—*T. Rivers, Sawbridgeworth.*

DR. HOOKER'S BOTANICAL MISSION TO INDIA.—The increased and increasing patronage which the

government of this country affords to science, is a subject of high satisfaction to all naturalists. This patronage is peculiarly evinced in the liberality with which the treasures contained in the British Museum, and those in the Royal Garden at Kew, are rendered available to the public good. In connection with the latter establishment, we have to announce that one of the most enthusiastic votaries of Botany, whose name stands at the head of the present article, has just quitted this country to further its interests. Dr. Hooker, having brought his "*Flora Antarctica*," part of the results of a previous voyage, to a close, has been appointed by Her Majesty's Government to investigate the vegetable productions of India, and especially of the Himalaya mountains; and as a treaty is now in progress of negotiation between the British powers in Hindostan and the Chinese, with reference to the boundaries of Thibet, it is possible even the latter interesting region may be visited by Dr. Hooker in the course of his journey. The most important assistance, in exploring the botany of northern India, is promised to our traveller by His Excellency the Governor-General, Lord Dalhousie, and by the Court of Directors of the Honorable East-India Company. After spending about twelve months in this undertaking, Dr. Hooker's instructions are to return in 1849 to Calcutta, and thence proceed to Singapore and Borneo. At the latter island, the valuable aid of His Excellency, Mr. Brooke, and the protection afforded by H. M. ship *Meander*, (commanded by the Hon. Capt. Keppel, to which ship Dr. Hooker will be attached as supernumerary medical officer,) will enable Dr. Hooker to fulfil the designs of the enlightened First Lord of the Admiralty, Lord Auckland, who directs that he shall pursue his botanical researches and draw up a report on the vegetable productions of the British settlement of Labuan, and such parts of Borneo as can be safely explored. It is especially his object to ascend, if possible, the great mountain of Keeny Baloo, supposed to be 14,000 ft. in height. Dr. Hooker embarked at Portsmouth on the 11th of November, in H. M. steam frigate *Sidon*, which conveys Lord Dalhousie to Alexandria, *en route*, for Calcutta, and he may be expected to arrive there towards the end of December. Two or three months will probably be devoted to investigating the plains of Bengal, and particularly the fossil vegetable remains in the coal formation at Budwan; and then Dr. Hooker will journey northward, perhaps to Sikkim, but his exact route must considerably depend on circumstances which it is impossible yet to foresee.—*London Journal of Botany.*

PEARSON QUINCE STOCKS.—We have lately heard a little on this subject, but I imagine before long we shall hear a great deal more; my own information, you will perceive, is very limited, and my object is merely to draw attention to the subject. I shall also have to name Mr. Rivers, of Sawbridgeworth, several times, so that I may appear to some to be a commission agent of his; but I beg to say, although I have been in his garden, I have never seen him in my life, and I much fear he would not employ me as his advocate, if he needed one.

Before speaking of these beautiful little trees, I would call to your mind the very injurious effect produced upon the soil of hundreds of gardens, both small and great, by the shade of large old Pear trees; in fact, in many instances the ground is rendered almost useless.

Pears are generally many years before they produce fruit, and in small gardens they are unsightly, from being vastly disproportioned to the inclosure, and if any attempt be made at reducing them in size, their productiveness is sure to be destroyed, so that a small garden inclosed by walls is better without standard Pear trees. Under these circumstances the owner is deprived of the most valuable of all dessert fruits, for although the Peach and Nectarine may be higher-flavored, they can only be had for a small part of the year, but the Pear may be enjoyed all the year round.

Apples are also undesirable in small gardens, but they may be bought reasonably; but the fine sorts of winter Pears can only be obtained in large towns at large prices. If, therefore, a mode can be shown by which a large quantity of the very finest Pears can be produced from trees which, instead of being unsightly and injurious, are not only harmless, but extremely ornamental, a benefit of a very high order is obtained.

If any one doubts whether this can be done, let him send to Mr. Rivers for a few of his root-pruned, Quince-grafted, pyramidal Pear trees, and request him also to send his directions for the mode of managing their roots, as everything depends on this being done with judgment, and I will venture to say that he will be so pleased that next year he will procure as many trees of different kinds as he has room for in his garden.

These little trees are exceedingly tractable and manageable, and the process is so simple, that although every tree may require somewhat different treatment, yet there will be found no difficulty in deciding upon each case, and the pruning of a hundred of such Pear trees would be only an amusement for a lady, with a small pair of nippers, and the root-pruning under her directions might occupy a laborer half a day in November. The treatment is as follows:—Having procured the trees, and if for trial I would leave the choice to Mr. Rivers, plant them up to the insertion of the graft, mulch them, and water diligently from April, until they are thoroughly established, and afterwards in dry weather. I can say from experience, the fruit will be found as fine, as large, and as good-flavored as from a tree of 10 years' standing in the same ground.

In July, if any shoot grows longer than is consistent with symmetry, shorten it with the nippers or the thumb and finger to its proper limit, and if it produces a fresh shoot where shortened, cut that shoot back in October about the eighth of an inch beyond the place from whence the summer shoot sprang; but if several shoots have required shortening, and have also produced summer shoots, and not many blossom-buds have been developed, then the tree requires root-pruning.

It is not a good practice, as recommended by some, to leave all the terminal shoots to draw the superabundant sap from the blossom-buds, because being left growing they also greatly strengthen the

roots and enlarge the stem of the tree; whereas, if root-pruning be duly attended to, there will be no danger in shortening all the shoots in July.

If the tree makes only a few inches of wood, and the terminal buds are blossom-buds, they are not to be shortened, nor are the roots to be pruned. If the tree is not symmetrical, and requires a shoot or two to balance it, make a deep notch over any dormant eye, and it will break next spring.

In shortening any shoot, consider whether you would like the new shoot to be right or left of the pruned shoot, and cut to an eye accordingly; but if the tree is pretty well balanced, any shoot that is shortened should have the last eye downwards, which has a tendency to check luxuriance by inclining the growth from the perpendicular line. Aim eventually to make your tree about 6 feet high, or 7 feet at the utmost limit, and from 2 feet to 2½ feet wide at the broadest part, which will be at 1½ foot to 2 feet from the ground in a well proportioned tree, although the branches will begin to grow within 6 inches of the ground; from the broadest part it should taper regularly to the top.

As soon as this point of growth is attained, root-prune more severely than before, causing the tree to produce nothing but blossom-buds; it will thus become a full-grown, full-bearing, Lilliputian or miniature pear tree for a century. Is this true? If so, how beautiful and how profitable! If false, let reasons be given why it cannot be effected. It is said it may be done in France, but not in the moist climate of England; but if I can get a tree 3 feet high, and in six or eight months from the nursery, to produce a full crop of fruit of full size and excellent flavour, merely by transplanting or root-pruning, why not at 6 or 7 feet? because a tree once brought to a full bearing condition, the habit may be perpetuated, provided the means which produced this habit be continued.

I have lately seen a row of Pears on Quince stocks of 16 to 20 years' growth, grafted low, and another row grafted standard height; in both cases the branches are drawn down almost to the ground, but ever since they were planted there has been open warfare between them and the pruner, the tree constantly shooting upwards or naturally, the gardener saying—No, you must grow downwards or unnaturally, and so cutting off the upright growths in winter, not daring to do this in summer; this luxuriant growth being thus far indulged, causes proportionate vigor in the roots and a great increase in the size of the trunk; there are consequently roots and a trunk adapted to a tree of 25 or 30 feet high, whereas the poor tortured thing is never suffered to rise above 7, presenting the unsightly appearance of a kind of Brobdignag dwarf or stump, instead of the Lilliputian I wish to introduce to your notice and protection.

That these Brobdignags bear fruit I do not deny, but that they bear as fine fruit as a tree with a stem proportioned to its head, and with roots proportioned to both, and growing in a natural form, and with the features of a full-grown tree, requiring little or no pruning, I do certainly disbelieve; and I can safely affirm I had finer fruit from my Lilliputians than I could find on the Brobdignags.—*F. Y. in Gardner's Chronicle.*

DOMESTIC NOTICES.

RURAL ARCHITECTURE—ARCHITECTS' TERMS.—We are glad to perceive among the advertisements of this number, that of one of our first architects, ALEXANDER J. DAVIS, Esq., giving details of terms for various professional services. We know very well, from personal observation, that a large number of country gentlemen, possessed of more or less taste for fine buildings, are deterred from calling in professional talent to their assistance by vague notions of the great expense of such services, etc. Many a dwelling just escapes being beautiful in its proportions and correct in its details, by this mistaken economy. A comparatively small sum, paid at the commencement, to an architect of ability, ensures permanent satisfaction to the proprietor of a tasteful house, and gives to the whole community an agreeable object instead of an ill looking and clumsy one. We very well know that the majority of mankind conceive they have certain good ideas in domestic architecture—in “building a house of their own”—not excelled by those in the possession of others. A single trial, and the perplexities of building without proper plan or advice is, however, generally sufficient to undeceive them on this point, and to prove to them that architecture is not an art intuitively understood by all men.

MR. DAVIS has had very extensive experience in his profession. The University of New-York, and the capitols of several of our states, are examples of his ability in public buildings; while some of the most elegant villas and cottages in the country (for example those of Col. RATHBONE, Albany, S. B. WARREN, Esq., Troy, Mr. HAROLD of Bridgeport, S. E. LYON, Esq., of Westchester, and many others,) are well known examples of his talent in domestic architecture. For invention, and scientific knowledge of his art, we do not know his superior in this country, and we recommend gentlemen about to build to visit his rooms at the Merchants' Exchange, New-York. They will find there a great variety of original designs for cottages and villas, and Mr. DAVIS, we are glad to be able to say, is, aside from business, as truly desirous as ourselves to contribute to a general diffusion of good taste and correct ideas in the beautiful art which he practices.

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WINE-MAKING IN THE WEST—CORRECTIONS.—Our proof-reader found great difficulty in some parts of the MSS. of Mr. LONGWORTH's interesting notes on “Wine-making in the West,” in our last number, and Mr. L. has sent us some corrections which he desires to make, and some additional information, as follows:

“At p. 316—for *Herbemonts*, *Madeira*, read *Herbemont's Madeira*. At p. 317—first paragraph—for “not as abundant leaves,” read “not as abundant bearers:” p. 318, for “a few weeks after working,” read “a few weeks after making:” same paragraph, “40,000 bottles,” should be “4,000:” p. 319 reads, “for years the blight has given us

but little trouble.” If so written [it is, Ed.] I have certainly said what I did not intend. What I should have said, is this, that the rot had given us no serious trouble till the last few years.

There are some points in which I differ from Mr. ELLIOTT's remarks. In preparing the ground he objects to “putting all the top-soil at the bottom,” and deems it better to mix it. I hold the contrary. Say you trench 18 inches deep, and have 14 inches of rich soil on the top, and a clay bottom; I throw the rich surface soil below, and have the 4 inches of clay on the top. The object is to prevent the roots growing within four inches of the surface. In Europe they yearly cut off all the roots near the surface, for, if allowed to remain, the lower roots become stationary, and do not grow, and in dry weather the upper roots suffering, the grapes shrivel.

In my vineyard the plough or cultivator is seldom used, the vines being planted too close to permit it. No vegetables are planted between the vines after the second year.

For the manufacture of pure Champagne, the juice, or must, should be taken from the press, and it is not fit for market till it has been operated upon for seventeen months, and if three or four years old the better. It is a tedious business, and the breakage of bottles in the coolest cellars is enough in some seasons to ruin a Jerseyman. The house in which I now manufacture it, was built with an arched cellar, expressly for the purpose. I find the building, though 40 ft. by 50, and two stories high, not large enough, and if my manufacturer succeeds, I shall build one of double the size, and a cellar two stories deep next fall. Yours with regard. N. Longworth. Cincinnati, Jan. 9, 1848.

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GREENHOUSE PLANTS IN PITS.—There are doubtless many of your readers, like myself, who would like to keep *Salvias*, *Petunias*, scarlet *Geraniums*, and many other tender plants, through the winter, in order to “bed-them-out” and enliven the flower garden in summer with their gay and perpetual bloom, and who have no green-house to effect this object.

Such persons may be glad to know, from one who has tried it, that a *pit* is the thing for their purpose. It may either be of good stout plank, or of brick laid up eight inches thick. Mine is of the cheapest and simplest kind, being made like a common hot-bed frame, only there are strong posts at the corners and intervals, and inch and a half plank for the sides. It is 12 feet long and 4 feet wide, and 3 feet deep. The front edge is just level with the surface, or a little above it, and the back edge is about 4 inches higher. This is for the top or outside lights—for the pit must have *double sashes*—the lower tier of sashes is 4 inches below the upper.

The outside of this is lined with tan about 2 feet deep and up to the level of the upper sashes. Whe^t

the weather is mild, and entirely without frost, I open the sashes and admit light and air, but for the greater part of the time, and always in cold weather, I keep both tiers of sashes close and well covered with a layer of 12 inches of rye straw. This, I find, keeps out the cold effectually—and as the spring advances, I gradually open and enure my plants to the light and air.

They are all in the finest order in April, and when planted out for summer growth, from being kept dormant all winter, grow more luxuriantly, and flower better than those kept in the green-house with fire heat.

I ought to add that, if the soil where the pit is made be wet, or retentive of moisture, there should be a slight drain made from it. The bottom should be covered with coal ashes, or sand, on which to place the pots. When they are first put in in Oct. they should have as much air as possible when the weather is not positively frosty, to harden them. Yours, *An Amateur. New-York, Jan. 4th.*

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FLOWERING HAWTHORNS.—Why do we so seldom see the many fine varieties of this lovely shrub in our gardens and shrubberies? Surely nothing is more pure and beautiful among shrubs than the Double White Hawthorn, with clusters of blossoms like *miniature double white roses*—or the single and double pink, or the double crimson. A little pruning—better still, *pinching off* the ends of young shoots—will give the hawthorn when planted out singly—it is naturally of a rambling habit—a neat and even an elegant form. It is one of the prettiest small trees for a lawn in places of moderate size. Yours, *An Amateur. New-York, Jan. 4th.*

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THE BEST MANURE FOR FRUIT-TREES.—I have read with the deepest interest the leading article “on the philosophy of manuring orchards,” in the last number. It has given me a great deal of new light, and I am satisfied that it will lead to experiments and trials in the hands of skilful and attentive cultivators that will greatly benefit all orchardists and fruit growers. But I have but little time for my garden, and only snatch, now and then, an hour for my fruit trees from other avocations. Will you have the kindness, therefore, to say in a few words, what mixture or compost of manures you consider safest and best for *all fruit trees*?
 Cincinnati, O., Jan. 1848. Yours, E.

[ANSWER.—The best compost for “all fruit trees” (without endeavoring to suit the specific wants of each particular fruit,) is a compost of *peat* or *swamp-muck*, reduced, or rendered available to plants, by *unleached* wood ashes. The peat should if possible be dug and carted out in winter—though it will answer if dug in the spring. As early in the spring as is convenient, mix thoroughly the wood ashes with the peat, in the proportion of five bushels of good hard wood ashes to one wagon load of peat. Let the heap lie a week, turn it over to incorporate more thoroughly, and in two or three weeks it will be fit for use. This compost, or manure, contains largely, lime, potash, phosphate, and vegetable matter, the elements most necessary to the growth and health of fruit

trees generally—and all in a state ready for food for these trees.]

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QUERIES FROM THE WEST.—Is the *Tree Pæony* a proper out-door plant?—that is, does it thrive and flower well, and does it withstand our winters when thus treated, and what is the best method of cultivating and propagating it? (a)

The Noisette, Bourbon and Hybrid Perpetual Roses I have introduced into my garden lately, all proved fine, and every thing that could be wished, with but one exception, although most of them did not flower much after August: the *Lamarque Noisette*, however, I must except, for it has proved thus far quite worthless. There were many buds on it, but they would all blast and drop off just before opening, so that I could not get a single bloom from it. It may not be genuine, but the buds seemed to be of the color named in the catalogues, so far as I could judge. The Cloth of Gold, and Solitaire, were especially fine—the first is considerably the largest, and Solitaire has the most vigorous habit; otherwise they are very similar. (b)

Among the finest of the others I received, I would mention the *Marquis Bocella*, *Duchess of Sutherland*, *Mrs. Elliot*, *Prince Albert*, and *Souvenir De La Malmatison*.

I should like very much to hear more about the Rose-bugs, whether they are not very destructive to roses at the east, and especially among the old nurseries and gardens about New-York city. They are not just here as yet, but I have seen thousands of them not a hundred miles distant; and when I see and hear of their ravages in some localities both east and west, I am almost tempted to despair of cultivating roses extensively.

Will you please tell us how it is with them where they have been known so long—whether they are not very numerous and destructive—and if so, how they are kept down? (c)

Have there been any Native American Grapes discovered, which are superior to the Isabella and Catawba for this latitude, or any better Raspberries than the red and white Antwerp, or are there *any as good that are hardy*; or any better variety of Currant, of the different colors, than the red and white Dutch, (which, by the way, so far as I have tried them, are not a whit different from the largest of those *commonly and generally* cultivated,) and the Black English? If so, will you please name and describe them? I find, annually, almost any quantity of new names, with high recommends in the catalogues, but I cannot hear any thing further about them. Very respectfully, yours, &c. F. K. *Phœnix. Delavan, Wisconsin, Dec. 1847.*

ANSWERS.—The *Tree Pæony* is one of the finest of hardy shrubs, and bears the winter here without the slightest protection. In the coldest parts of the Union, it may, perhaps, need the protection of a few branches of evergreen thrown over it in winter. It grows freely in any good rich garden soil—and its magnificent flowers, some of them with a circumference as great as a man's hat, are produced with the greatest regularity and abundance in May. It is propagated by sucker layers, or by grafting the young wood in July on bits of tubers

of the common *Pæony*—the grafts being placed under glass till they have united. The latter is the most rapid mode known.

(b) The *Lamarque* Rose will rarely produce fine flowers while the plant is young—but as it gets older, and the flower buds come on spurs or side-shoots of old wood, they are uniformly fine and bloom well. Hence the plant should be trained high and the long shoots protected in winter.

(c) So far as our observation extends, this insect is only troublesome in districts where light, sandy soil abounds. In such soil they find winter waters so genial, that they multiply to an incredible extent. In loamy or heavier soils, they are seldom troublesome. It is certainly one of the most difficult insects to destroy. And when it abounds greatly, perhaps the only effectual way of destroying it, is to watch closely at the time of their exit from the soil—about the 1st of June—pour boiling water over the soil at the roots of the trees and rose bushes where they rise.

(d) No better *hardy* native grapes than the *Isabella* and *Catawba* have yet been originated. It is the desideratum of the day—and many are engaged in endeavoring to produce new varieties of merit.

(e) There is no better Raspberry yet known than the *true Red Antwerp*—the *Fastolf* is as large and very handsome, but not quite so firm in texture. *Knevett's Giant* is quite hardy—large and fine. The large *White* and *Red Dutch* are yet on the whole, the best currants—though *May's Victoria* really bears larger clusters of berries. The *true Red* and *White Dutch* are nearly twice the size of the common red and white currants of country gardens. We have grown them side by side in the same soil.

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PEARTREE BLIGHT.—MR. ERNST, in his article on pear blight in the last number, says "the idea is mostly abandoned that any form of blight is caused by insects," and that in lieu of that idea the frozen-sap theory is adopted, which to a limited extent explains the evil, and also intimates that his theory of the summer-sun's rays scalding the sap, is the other cause of what he calls the fire blight."

With his opinion "that insects do not cause any form of blight," I beg leave to differ, and in support of my views illustrate by cases—which, if not satisfactory to him, may prove interesting and elicit opinions from others.

Case 1st.—A *Bergamot d'Esperin* pear tree, one year from the bud, on quince roots, imported into Boston for me by a friend, from the interior of France, and planted out late in the spring of 1847, not the least indications of frost being seen afterwards, appeared in perfectly healthy condition, and grew from the leading bud of the stem. After the new wood had attained to a growth of seven or eight inches, the extremity of the stem with its leaves suddenly turned black. After two inches had become affected, I amputated at a point one inch below the discoloration. The remainder of the stem continued fresh and green for several days, when the disease reappeared. I repeated the amputation as before, and again the disease showed itself, when I concluded to abandon it to

nature; the stem died down to an inch or two above the bud's insertion, where a complete line of demarkation formed, and with the dead wood on, a dormant bud burst, and a new stem of six inches grew before autumn.

Case 2nd.—A *Colmar d'Arenburgh*, two years from the bud, on quince roots, imported from Mr. Rivers, arrived and was set out quite late, not the slightest appearance of frost being seen afterwards; came out in full leaf, foliage indicating perfect health. No new wood appeared until about the middle of July, when a vigorous and healthy shoot grew from the leading stem. After it had grown to a length of six inches the extremity turned black as in the first case, and in less than a week the whole tree was killed. This tree was of pyramidal form, well branched, about four feet high, and protected from the sun by large trees and bushes.

Case 3d.—A *Colmar d'Arenburgh*, grafted on my own grounds on pear stock, in 1846; taken from the nursery bed and set out as a standard the same autumn. This tree was about four feet high, stout, healthy and well branched, but made no new growth until after the middle of July, when the leading bud started. After it had made a growth of about five inches, I noticed the same peculiar appearance of discoloration of leaf and wood first commencing, when I immediately amputated the whole of the new growth, which saved the tree, for soon after a dormant bud adjoining the base of the amputated limb, burst forth and made a shoot of three inches before autumn.

Case 4th.—A *Bartlett*, on pear roots, six years from the bud, bearing fruit and in perfect health, sent out new wood from its whole top. After the new shoots had attained their growth and were mostly over six inches long, I noticed the same symptoms of disease appearing in the extremities, as in the other cases, and amputated the whole length of the new wood, as the disease showed itself. This invariably put a stop to it. This tree was not attacked until early in September, about which time we had several cold mornings, the mercury going as low as 35°. On one of these mornings, quite early, and before the sun had warmed the air, I noticed a limb, the extremity of which appeared affected, and amputated it, when I discovered its whole end and about one-fourth of an inch of its length covered with a scaly looking insect, in shape resembling sowbugs, but of a brown color and quite small. They appeared to be chilled by the cold air, for the moment they were brought to the full rays of the sun they skipped off like fleas. The wood from which they were taken was just beginning to show symptoms of the disease, and when cut in two emitted its peculiarly nauseous aroma. The trunk of this tree shows no symptom of the other form of blight, and appears now in perfect health. In several other of my standard trees, limbs were affected and treated similarly, all of which appear now in health. As the *Bartlett* was the last tree affected, and the limb on which I discovered the vermin the last one amputated, I had no opportunity of continuing my observations.

The above cases, with numerous others which came under my observation last summer, sufficient

ly indicate to me the cause of this species of blight. Frozen sap it could not have been, as two of the trees were imported and set out in the spring, after all frosts were over, and the new wood was invariably first attacked. The sun's rays could not have induced the disease, for if so all the limbs of a particular tree would probably have been affected at one time, and the Bartlett was not affected until September, when the sun's rays have comparatively little power, and its limbs attacked at different times. But does not the discovery of the vermin settle it conclusively? It does to my mind. And the remedy is as certainly indicated—that is, amputation with a *clean knife* several inches below any appearance of discoloration. I say with a *clean knife*, because I am certain from observation that the small quantity of diseased sap which adheres to the blade is sufficient to poison a healthy limb.

As to the theory of frozen sap blight, and sun-blight, for the other and by far the most serious blight of the pear tree—that which first makes its appearance on the body of the large branches and the trunk of the trees—I do not as yet intend to express myself. I only wish at present to propound a question or two for response from yourself and Mr. ERNST.

If frozen or scalded sap causes this form of blight, why is that as a general rule, bearing trees, or those of bearing age, are the only ones attacked? That this is so, experience has abundantly proved. I have now growing over two hundred and twenty varieties of the pear, and probably more than five hundred trees, full four-fifths of which are young and have not yet borne. I have never known a case of this species of blight attacking a tree which had not blossomed or borne fruit. Ought not the bark of the young tree to be more sensitive to such influences than the mature and hardened bark of older trees? I am perfectly well aware that the outer bark of young trees is often, as it were, burned by the winter sun, but this is not blight; for it is always seen in early spring and with proper care, that is, excision of the injured bark and a coating of shellac over the wound, seldom or never materially injures the tree. That it may be understood what I mean by blight, allow me to describe it as it appeared among my trees at Albany last summer. In its first stage the outer bark of a large limb or trunk of a bearing tree showed separate or continuous patches of a dark brownish colour, with raised or circumscribed edges, presenting precisely the appearance of an erysipelatos inflammation in the human subject. If cut into there was an abundant exudation of viscid and nauseous sap, emitting a peculiar odour. In a few hours this stage of the disease passed, when the bark became shrunken and assumed a much darker color, verging to black. If discovered in a limb during the first stage, amputation at the junction of the limb and trunk checked it in some cases, but if the trunk was attacked we left it to nature. In most cases the tree was completely killed in a short time, but in some a line of demarkation formed a few inches above the ground, when new buds burst and threw out limbs. At that stage I amputated near the new bud and covered the wound with shellac. Those trunks ap-

pear now to be in a healthy state. The disease made its appearance in June and continued to show itself throughout the summer and autumn. Trees of many varieties were attacked—those native to the country as often as those of foreign origin. Mr. E. excepts Seckels from the disease in Ohio, but I cannot do this for Albany, as they appeared to suffer equally with other varieties. Last winter was an unusually mild one for this climate; peach trees, which are generally injured, were not winter-killed in the least. From this fact you can draw your own inferences. Yours, very truly, *Herman Wendell. Albany, January 10th, 1848.*

REMARKS.—We stated, in commenting on Mr. ERNST's excellent article in our last, that we differed with him with respect to *insect blight*, we believing insects to be a fertile cause of one form of blight in some portions of the country. The able article (see page 365) of Dr. HARRIS, of Harvard University, one of the most skilful and accurate observers in the country, reaffirms and settles this point.

It is perhaps well enough to repeat here that, from various sources of information, we are inclined to believe that the insect blight is much more prevalent in the sea-coast states than in the western states.

Dr. WENDELL is no doubt quite correct in supposing the pear blight, which was last year so destructive to this tree about Albany, to have been partly owing to insects. After perusing Professor HARRIS's contrasts of the characters of the different forms of blight, he will no doubt be able to judge more accurately how far insects must be held accountable for the disease in his trees.

We are still, however, strongly inclined to believe that frozen sap was the cause of blight in some of the large trees in his grounds. "A mild winter"—that is, a winter with sudden and great fluctuations of temperature—in a climate like that of Albany, is perhaps more fatal to a tender-barked tree than one of uniform low temperature. Take the present season for example. The winter here has been one so mild that there has scarcely been a week that the transplanting of large trees might not have been carried on—the ground being only frozen two or three inches. Yet at Albany, on the 12th or 13th of January, the mercury sunk as low as 22 deg. below the zero of Fahrenheit. This was perhaps followed by bright weather, and in trees exposed fully to this great alternation of frost and sun, we think frozen sap blight would be very likely to occur.

We have seen hundreds of young pear trees, two years old, killed nearly to the ground with frozen sap blight. But with the more active vital powers possessed by them, they more easily recover from its effects, when the diseased parts are amputated, than older trees.

Our own observation leads us to coincide with Mr. ERNST in considering the *Seckel* usually almost exempt from the blight. But when a disease occurs in a neighborhood, in a more than usually malignant form, individuals usually exempt often fall victims to it—and this, we think, accounts for the exception stated by him, to the general sound health of the *Seckel* pear tree.

Dr. WENDELL also informs us that he has this winter protected with straw bands many of his most valuable young trees, and we hope he will give us in due time the result of this experiment.

In conclusion we repeat that we now believe the pear blight to be caused in three ways, viz: by insects—by alternate freezing and thawing in winter—and by the sun's rays in summer. The ingenuity of all good cultivators must be tasked to invent simple preventives and remedies for these various forms of a disease which this tree, cultivated with so much ease in some parts of this country, suffers so greatly from in others. ED.

NOTES OF RASPBERRIES.—In your Dec. number, page 266, you have corrected two *supposed errors* in my article, but in both cases you labor under misconceptions. You have a common red raspberry at Newburgh, which is the *Rubus strigosus*, a native growing abundantly in your vicinity, and which propagates itself by suckers; but the common red raspberry, long enumerated as such in the catalogues, and grown in immense numbers for market around New York, and especially on this Island, where acres on acres are to be found, and which constitutes 19-20ths of all the supplies of the city of New York, not only for the table but for raspberry brandy, is a *totally distinct species*. [Will Mr. PRINCE tell us what species it is? ED.] having no affinity to the *Rubus strigosus*, but possessing the characteristics named in my last article, and it is allied to no other in habit but the common black cap, (*Rubus occidentalis*.) to which it is so similar in growth as scarcely to be distinguishable when the fruit is not on the plant. Its shoots are perhaps of not quite so deep a red, and rather less spiny. The fruit is red and larger than the black cap. It is the same variety that is still called "English red" in some catalogues, and was generally so called until I exposed the error about 15 years ago. This inexcusable misapplication of title had sprung into existence when our States were colonies, and were in the habit of receiving the fine varieties of exotic fruits from England alone, and when the silly idea prevailed of European superiority in the vegetable kingdom, which some were even weak enough to apply to the animal kingdom also. Our best native grapes, the Bland and others, were then termed "English;" the Persian Walnut or Madeira nut was called "English Walnut," and so of other fruits. Even the Isabella Grape, when first brought prominently before the public, was claimed by a French writer, (whose article was published in the American Farmer) as an old and familiar acquaintance from some part of France.

The "Common Red" Raspberry of this Island, which is a native of the Catskill mountains, is not adverted to by Torrey and Gray, which would indicate that they deemed it a variety only, and as I have already stated it is allied to none other than to "*Rubus occidentalis*." The "*Rubus Pennsylvanicus*" spoken of by me, is not the "*Rubus Pennsylvanicus*" referred to by Torrey and Gray, but a totally distinct species, which they appear to have omitted to notice. It has doubtless escaped their attention on account of its being so rarely met with.

I never have yet seen the true *Rubus Pennsylvanicus*, but at one garden besides my own. The Canadian Raspberry referred to, is also a *distinct species* widely different in its habit, and very distinct in the flavor of its fruit from all others. It seems also to have been omitted by Torrey and Gray. Among my seedlings, I have two plants which are hybrids between the Fastolf and Ohio Everbearing. They are of remarkable character, having all the vigor of growth and color of the wood of the former, but singularly enough, they possess the American propensity to throw down the ends of the branches and form new plants therefrom. They withstood the last winter unprotected, and are left exposed the present one.

While discussing as to the Raspberry, I will explain a point but little understood concerning the "Red Antwerp" variety. Many suppose, from its title, that it is of Belgian origin, and consequently very hardy, whereas in fact it is a native of the Island of Malta. The great object to be attained in our attempts at seminal improvements, is the production of varieties equal or superior to the largest and finest known, and at the same time so perfectly hardy as to endure our severest winters.

The most hardy of the European varieties, are the Franconia, Knevett's Giant, Fastolf, the Black hybrid (of Rivers,) and the German Black. The White and Red Antwerp require to be somewhat protected by binding in straw, or covering with earth, and in very severe winters it would be better if the others were protected also, as it preserves every part of the canes in a perfect state, and it in reality exacts very little extra labor.—Wm. R. Prince. *Flushing, L. I. Dec. 13, 1847.*

WM. PENN CHRYSANTHEMUM.—I observe a query in the last No. of the Horticulturist, respecting origin of the "Wm. Penn Chrysanthemum."

This favorite Chrysanthemum originated with Mr. ROBERT KILINGTON, one of our most enthusiastic gardeners. It was exhibited for the first time, before the Pennsylvania Horticultural Society, at the stated meeting of November 16, 1841, and received, as it justly merited, the premium for the best American Seedling. The committee remark in their award on the occasion, "that this prize Seedling Chrysanthemum is decidedly the finest variety ever presented to this society, of a beautiful Rununculus form, and pale shaded pink color." In all our Chrysanthemum shows, this variety enters into every collection, and is considered one of the choicest. Very respectfully, yours, &c. Tho. P. James. *Philadelphia, Jan. 14.*

NOTES ON DOWNING'S "COLOURED FRUITS AND FRUIT TREES."—Among the various admirable features of man's inner constitution, there are few productive of more pleasure than the power of association; that faculty by which a picture, a word or a tone, will bring before the mind, with life-like reality, scenes, persons and things, entirely unconnected with present circumstances.

The exercise of this faculty has just been called into requisition; as, seated by a glowing fire, and with a strong impression of cold and dreariness without, we have turned over these highly finished

engravings. Their accordance with nature, and their faithful colouring, awaken many a vision of early summer, with its bud, and bloom, and fresh vegetation; of summer evening winds, and the luscious flavor of cherries, plums and peaches, whose fair proportions and rich colours are here presented so temptingly; of

"Our clear and pleasant autumn time,"

which brings its share of palatial delicacies, in the shape of rich and spicy pears and apples, whose beauty might well rival those of Hesperides.

And, with our thoughts of these fruits, and their seasons, are mingled recollections of so much quiet enjoyment, in watching the progressive advance of vegetation, and the change of fruit from day to day, until it reaches perfection of growth and ripeness, that we readily express our obligations to the author for these engravings, and only wish there were more of them.

We very much doubt whether, in any country, the culture of fruit is pursued with as much ardor, or critical discernment of its distinctive qualities, as in this country.

In the vicinity of Boston, there seems almost a pear-mania; which, fostered by the Horticultural Society, is establishing in this country the culture of many excellent varieties of that fine fruit. The pomological knowledge of some of the members of that society is here of practical benefit; and CUVIER, in the Parisian Halls of Comparative Anatomy, scarcely described with more enthusiasm the structure and habits of the subject before him, than our friend, the *secretary*, comments in the society's committee-room upon the delicacy and flavor of a favorite pear. In Cincinnati the mania, if it may be so called, has centered upon the *strawberry*; and the various discussions upon its characteristics bid fair to equal a dispute concerning the difference between *ille dixit* and *dixit ille*. Amid this general interest in fruits, these engravings will, doubtless, be welcomed and valued by all amateurs. They number more than seventy, and include many of the most esteemed and choicest varieties. The *Early Harvest* is an excellent representation of one of our finest early apples. The *Gravenstein* is finely touched; and the little *Lady Apple* has all the beauty which has long made it a favorite ornament for the table. The *Baldwin* we thought rather too red; but the *Yellow Bellflower* is exceedingly true to nature. Our favorite *Esopus Spitzenberg* is also there; but we miss the world celebrated Newtown Pippin—the very best of our Long-Island fruits. The *Moorpark Apricot* is well done, and is deservedly praised.

Among the cherries, we noticed a good portrait of the *Black Tartarian*, and that fine sub-acid cherry—*Carnation*. *American Amber*, the child of this town, is well coloured, but we think is rather smaller than that fruit. This is, however, a safe fault, and evinces an absence of any desire to exaggerate.

Among the plums, *Jefferson* is really beautiful; and our fine native plums—*Columbia* and *Lawrence's Favorite* are very correct. *Coe's Golden Drop* and *Smith's Orleans* are also well portrayed.

Among the pears, we may especially notice the

high flavored *Seckel*, *Dix*, and a life-like representation of *Bartlett*. *Buffum* is very good; and *Fretk of Wurtemberg* is very true to life—standing out very boldly from the paper.

Beurre d'Arenberg and *Flemish Beauty* are superbly executed; and their russet spots and dashes are touched with a high degree of artistic skill. The author's locality must have changed the colour of the Bloodgood; for his representation is quite green. Here, in its native soil, it has a decided russet. [No; the error in colour is one of the artist's, and is, we believe, found only in a few copies. The original drawing was a fine russet yellow. Ed.]

Among the peaches, the Royal George is coloured with much skill; and we should like to see more engravings of this finest class of our American fruits.

We can, perhaps, more readily appreciate the excellence of these engravings, from some experience of our own, of the great difficulty of obtaining good artists to colour them, either here or abroad. To be executed well, they should be coloured entirely by hand; and are constantly liable to incorrectness, unless under the actual supervision of a competent judge of fruits. The drawings are very good; and the arrangement of light and shadow impart to them quite a tasteful appearance. We think these engravings will tend to increase horticultural taste; and we truly hope their success may be such as to induce the author to give the public another series, to contain other highly esteemed varieties. *S. B. Parsons. Flushing, L. I., Jan., 1848.*

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NEVERFAIL, OR RAWL'S JANNET APPLE.—Mr. DOWNING—I see, in your December number, a set of "Rules for American Pomology;" said to be adopted by the leading horticultural societies of the country. If these rules are to govern us in naming fruit, neither our Kentucky friends, nor myself, can be gratified with regard to our favorite names for the apple which stands at the head of this article. For one of these rules says:—"When two persons have named, or described a new variety of fruit, then the name and description first published, if according to the rules herein indicated, shall have the priority." Now, Mr. Andrew Hampton, an old nurseryman, near Richmond, Ia., has described, in the "Western Farmer and Gardener," published at Cincinnati, O., forty-one varieties of apples, which he had cultivated. In the 1st number of vol. iii., p. 14, published Nov., 1841, he has the following description of the apple under consideration:

"39. NEVERFAIL.—Milding size; form round, somewhat long, lessening towards the crown; colour red and yellow striped; the flesh is tender, juicy and well flavored. It keeps equal with the Newtown Pippin or Winesap. They are near two weeks behind common apple trees, in the spring, putting out leaves and blossoms; not considered among the best bearers; but sometimes, when all other apples have been killed by the early frosts, this has been well loaded with fruit."

As we conceive this description to be in accordance with the rules above referred to, and as it was published some six years in advance of any other, in a horticultural paper of the largest circulation in the west, NEVERFAIL is henceforth to be the name

of this fruit; and *Rockremain* and *Rawl's Gennet*. *ing* will have to give place.

The only objection I have to the above description, is that part which says, it is not "considered among the best bearers." This may all be true, in Mr. Hampton's soil and situation; but with us, it is a profuse bearer. It bears such loads as to be rather an objection to it than otherwise; as it renders much of the fruit under size, and hanging in such clusters permits the insects to borough among the branches, and by biting it renders considerable of the fruit knotty and imperfect. Owing to these facts, I at one time did not consider the *Neverfail* worth cultivation, and actually cut down several trees. But since I have discovered its power to resist the rot, which has, of late years, attacked the apples of this country, I have changed my opinion. And, as it regards the "universality" of the name to which you refer, in your last, I will pledge myself that this apple is called, in the west, *Rockremain*, or *Neverfail*, by ten nurserymen and orchardists to one that calls it *Rawl's Gennet*. Yours,

&c. C. Springer. Meadow Farm, Ohio, Dec. 29th, 1847.

REMARKS.—If our correspondent will examine the "Rules of American Pomology," he will find that the description of this fruit, given in the *Western Farmer*, is not properly a description; it is only a fragment of a description. According to ART. III, of the Rules, "no new native fruit shall be considered named, until it is accurately described in *Pomological terms*," etc.; and ART. IV specifies the points which must be mentioned, in order to constitute such description.

Mr. HAMPTON's sketch of this fruit does not come within these rules; and he evidently only intended it as a sketch, and not a full description.

The "Rules of American Pomology" are not intended to govern the past, but the future; and strictly can only be said to apply to any period antecedent to their adoption. We confidently look, however, to their preventing much confusion, and the adoption of many indifferent fruits hereafter. Ed.

MASSACHUSETTS HORTICULTURAL SOCIETY.

A stated meeting of the Society was held Saturday, January 1st, 1848.

President WILDER in the chair. The President read the records of the last meeting.

The Chairman of the Executive Committee submitted the list of Premiums for the present season, and,

On motion of C. M. Hovey, it was recommitted, in order to make some alterations in the rules and regulations.

The following gentlemen were elected a Committee of Arrangements for the Annual Exhibition, to be held on the 20th, 21st, and 22d of September next:

Joseph Breck, Chairman; Samuel Walker, Aaron D. Williams, jr., F. W. Macoubray, Otis Johnson, Joseph S. Cabot, Josiah Lovett, John Fisk Allen, David Haggerston, P. B. Hovey, jr., Ebenezer Wight, William Quant, Parker Barnes.

Abel Moore, Concord, Wm. Bogle, Melrose, were elected members of the Society.

An adjourned meeting of the Society was held Jan. 8th, 1848. President WILDER in the chair.

The Finance Committee submitted the following report:

The Committee of Finance, having examined the accounts of the Treasurer, respectfully submit the enclosed statements of Receipts, Expenditures and Investments of the Society; from which, it appears that the Receipts have been seven thousand six hundred and thirty-three dollars and sixty-seven cents, including the balance of fifty-nine dollars and fifty-eight cents, in the Treasurer's hands at the commencement of the year, as per statement marked A. That the expenditures and investments during the year have been seven thousand five hundred and eighty-six dollars and thirty-five cents, as per statement B.

That the real estate and personal property of the Society, as valued in the schedule annexed, marked C, amounts to forty-five thousand and ninety-three dollars and fifty cents.

JOSIAH STICKNEY,
JOSEPH BALCH,
Committee.

Statement A.—Receipts from Jan. 1st to Dec. 31st, 1847.

Balance in the Treasury Jan. 1,	\$59 53
Cash of Geo. Bond, Esq., Treasurer of Mount Auburn,	3,233 41
Rent and taxes of store,	1,090
" of hall,	350

Donation by Josiah Bradlee, Esq.,	500
Admission fee and assessments,	1,356
Exhibition—weekly,	\$188 83
" annual,	560 86
Dividends,	749 69
	294 99

\$7,633 67

Statement B.—Expenditures.

Paid—Investment of Bradlee fund,	\$500
Insurance for 1847 and 1848,	115
Premiums,	1,241
Railroad stock,	2,458 50
Taxes,	180
Library,	141
Interest,	750
Door-keeper and care of hall,	444 72
On acct. of Transactions,	450
J. B. Hancock,	160 75
Repairs,	238 13
Printing and advertising,	409 73
Diplomas,	43 50
Gas,	54
Miscellaneous expenses,	399 99
Balance in the hands of the Treasurer Dec. 31st, 1847,	47 35

\$7,633 67

Schedule C.—Schedule of the property of the Massachusetts Horticultural Society.

Horticultural Hall, School-st., valued at,	\$36,000
Three chandeliers in said hall,	390
Two marble vases,	95
Two Bradlee vases,	150
Glass and other ware,	900
Library,	1,300
Furniture and safe,	300
Appleton fund,	1,000
Lyman "	1,000
Bradlee "	500
22 shares Boston and Worcester Railroad stock—at cost,	2,458 50
	\$45,093 50

The only debt of the Society known to the Committee is a note, secured by mortgage on the real estate, for fifteen thousand dollars, dated 18th May, 1844, payable in five years, with interest at the rate of five per cent. per annum—half yearly; but it is understood that there are claims against the Society for unliquidated accounts, for premiums awarded but not paid, printing, dies for medals, alterations of the Hall, painting, &c. &c., amounting to about \$2000.

They also reported that a certificate of the Bradlee fund, invested in the Massachusetts Hospital Life Insurance Company, had been passed to the Treasurer.

The President, in behalf of the committee appointed to reckon with the treasurer of Mt. Auburn Cemetery, reported, that the committee had received thirty-five hundred dollars of Geo. W. Boud, Esq., treasurer of said association; and that a further sum might be expected at the final auditing of the accounts on the third Monday of this month—a day agreed upon for that purpose.

Voted, That the Committee of Finance be requested to invest, in such manner as they may deem best, *two thousand dollars*, to be added to the appropriation for paying off the mortgage on the Society's Hall.

The Executive Committee reported the list of Prizes to be awarded the present year, with a revised code of regulations, which was accepted.

The Chairman of the Library Committee, C. M. Hovey, submitted the annual report, which was accepted and placed in the hands of the Executive Committee to fill up the appropriation with such an amount as the funds of the Society will warrant.

Voted, That the Committee of Publication be requested to have the reports of the several committees, awarding premiums for 1847, printed for the use of the members, and laid upon the table at the next meeting.

Adjourned to first Saturday in February.

Premium List for 1848.

PROSPECTIVE PREMIUMS.

For objects to be originated subsequent to A. D. 1846, and which, after a trial of five years, shall be deemed equal, or superior, in quality, and other characteristics, to any now existing.

For the best Seedling Pear, the Society's large Gold Medal, valued at.....	\$60 00
For the best Seedling Apple, the Society's large Gold Medal, valued at.....	60 00
For the best Seedling Hardy Grape, the Society's large Gold Medal, valued at.....	60 00
For the best Seedling Plum, the Appleton Gold Medal,.....	40 00
“ “ Cherry, the Lowell Gold Medal,.....	40 00
“ “ Strawberry, the Lyman Plate,.....	50 00
“ “ Raspberry, the Bradlee Plate,.....	40 00
“ “ Hardy Rose, the Society's large Gold Medal,.....	60 00
For the best Seedling Camellia Japonica, the Society's large Gold Medal,.....	60 00
For the best Seedling Azalea Indica, the Lowell Gold Medal,.....	40 00
For the best Seedling Tree Pæonia, the Appleton Gold Medal,.....	40 00
For the best Seedling Herbaceous Pæonia, the Lowell Gold Medal,.....	40 00
For the best Seedling Potato, the Society's large Gold Medal,.....	60 00

SPECIAL PRIZE LIST OF FRUITS.

To be awarded in the year 1848, viz: Twenty Prizes of Five Dollars Each.

2 prizes two best varieties and specimens of Summer Apples.	
2 “ “ “ Autumn Apples.	
2 “ “ “ Winter Apples.	
2 “ “ “ Summer Pears.	
2 “ “ “ Autumn Pears.	
2 “ “ “ Winter Pears.	
3 prizes best varieties of Cherries.	
2 “ “ “ Plums.	
3 “ “ “ Peaches.	

The specimens presented for the above prizes, shall consist of not less than three specimens of each variety of Apples, Pears and Peaches; not less than one dozen Plums, and two dozen Cherries; all of which shall be at the disposal of the Committee on Fruits.

PREMIUMS FOR FRUITS.

For the best and most interesting exhibition of Fruits, during the season, the Lowell Medal or Plate, valued at... \$25 00
For the next best, the Bradlee Plate, valued at..... 15 00

To be awarded at the Annual Exhibition in September.

APPLES.—For the best twelve varieties, of twelve specimens each, the Society's Plate, valued at.....	25 00
For the 2d best do. the Appleton Silver Gilt Medal,.....	10 00
For the 3d best do.	5 00
PEARS.—For the best twelve varieties, of twelve specimens each, the Lyman Plate, valued at.....	25 00
For the 2d best do. the Lowell Silver Gilt Medal,.....	10 00
For the 3d best do.	5 00
GRAPES.—For the best five varieties, two bunches each, the Lyman Plate, valued at.....	15 00
For the best three varieties, two bunches each, the Bradlee Plate, valued at.....	10 00
For the best two varieties, two bunches each,.....	7 00
For the best one variety, two bunches,.....	5 00
ASSORTED FRUIT.—For the best basket of Fruit, of various kinds,.....	10 00
For the next best do.,.....	7 00
For the next best do.,.....	5 00
For the best dish of Apples, not less than twelve specimens of one variety,.....	6 00
For the 2d best do.,.....	4 00
For the best dish of Pears, not less than twelve specimens of one variety,.....	6 00
For the next best do.,.....	4 00
Assorted fruits in baskets shall not be entitled to any other than the premium for such.	

☞ The above premiums to be awarded on the first day of the Exhibition.

PREMIUMS DURING THE SEASON.

APPLES.—For the best Summer Apples, on or before the 1st September,.....	6 00
For the next best do.,.....	4 00
For the best Fall Apples, on or before the 1st Dec.,.....	6 00
For the next best do.,.....	4 00
For the best Winter Apples, on or before the 3d Saturday in December,.....	6 00
For the next best do.,.....	4 00
PEARS.—For the best collection of new Pears, not exhibited before this year, the Society's Silver Gilt Medal,.....	15 00
For the next best,.....	10 00
For the best Summer Pears, on or before the 1st September,.....	6 00
For the next best do.,.....	4 00
For the best Fall Pears, on or before the 1st Dec.,.....	6 00
For the next best do.,.....	4 00
For the best Winter Pears, on or before the 3d Saturday in December,.....	10 00
For the next best do.,.....	6 00
CHERRIES.—For the best specimen, not less than two quarts,.....	6 00
For the 2d best do.,.....	4 00
PEACHES.—For the best specimens grown under glass, previous to July 15,.....	6 00
For the 2d best do.,.....	4 00
For the best specimen grown in open culture,.....	6 00
For the 2d best do.,.....	4 00
NECTARINES.—For the best specimen of Nectarines,.....	6 00
For the 2d best do.,.....	4 00
QUINCES.—For the best specimens of the best kind of Quinces,.....	5 00
For the 2d best do.,.....	3 00
PLUMS.—For the best Plums, of the best flavor, not less than two quarts,.....	6 00
For the next best do.,.....	3 00
GOOSEBERRIES.—For the best flavored and finest specimens, two boxes,.....	5 00
For the 2d best do.,.....	3 00
CURRENTS.—For the best flavored and finest specimens, two boxes,.....	5 00
For the 2d best do.,.....	3 00
RASPBERRIES.—For the best specimens of Raspberries, not less than two boxes,.....	5 00
For the 2d best do.,.....	3 00
BLACKBERRIES.—For the best specimens of Blackberries, not less than two boxes,.....	5 00
For the 2d best do.,.....	3 00

STRAWBERRIES.—For the best specimens of Strawberries, not less than two boxes,	\$6 00
For the 2d best do.,	4 00
For the 3d best do.,	3 00
MUSKMELON.—For the best Muskmelon,	5 00
For the 2d best do.,	3 00
FIGS.—For the best specimen of Figs,	5 00
For the 2d best do.,	3 00
GRAPES.—For the best specimens and the best varieties of Grapes, grown under glass previous to July 1st,	10 00
For the 2d best do.,	7 00
For the best specimens and varieties of Grapes, grown under glass subsequently to July 1st,	10 00
For the 2d best do.,	7 00
GRAPES, (<i>Native</i>).—For the best specimen and variety of Native Grapes,	5 00
For the 2d best do.,	3 00
[The Committee on Fruit will hold a session to award the premiums on Summer Apples and Pears, on the first Saturday in September.	
On Autumn and Winter Apples and Pears, on the third Saturday in December.	
All gratuities for Seedlings, will be equal to the highest prize awarded to that variety of fruit.	

PREMIUMS FOR PLANTS, FLOWERS, AND DESIGNS.

<i>Display of Green-house Plants, in pots, Through the Season.</i>	
For the best display of Green-house Plants, in pots, through the season, the Appleton Gold Medal, valued at	40 00
For the 2d best display of do., the Society's Silver Gilt Medal, valued at	15 00
Provided, however, that whatever amount may be awarded during the season, for the exhibition of Pot Plants, to the person who shall be entitled to said medals, shall be deemed as constituting a part of their value.	
<i>Display of Green-house Plants in Pots.</i>	
To be exhibited at the opening of the Hall, on the first Saturday in May:	
PELARGONIUMS.—Class I.—For the best six new and rare varieties, grown in eight inch pots,	6 00
For the 2d best do.,	4 00
Class II.—For the best six varieties of any sort, grown in large pots,	6 00
For the 2d best do.,	4 00
ROSES.—For the best six varieties of Tea, Bourbon, Noisette, or Bengal,	6 00
For the 2d best do.,	4 00
CUT FLOWERS.—For the best display,	3 00
For the 2d best do.,	2 00
FUCHSIAS.—For the best six varieties,	6 00
For the 2d best do.,	4 00
CACTUS.—For the best six varieties,	3 00
For the 2d best do.,	2 00
CALCEOLARIAS.—For the best six varieties,	3 00
For the 2d best do.,	2 00
CINERARIAS.—For the best six varieties,	3 00
For the 2d best do.,	2 00
HEATHS.—For the best varieties,	3 00
For the 2d best do.,	2 00
VARIOUS SORTS.—For the best display of various sorts of Green-house Plants, not less than twelve pots,	8 00
For the 2d best display,	5 00
HYACINTHS.—To be awarded 2d Saturday in May.	
For the best display, not less than twenty varieties,	\$5 00
For the 2d best do.,	3 00
TULIPS.—To be awarded the 3d Saturday in May.	
For the best thirty distinct varieties,	8 00
For the 2d best do.,	6 00
For the 3d best do.,	3 00
PANSIES.—To be awarded the 4th Saturday in May.	
For the best twelve distinct varieties,	4 00
For the 2d best do.,	3 00
For the 3d best do.,	2 00
HAWTHORNS.—To be awarded 4th Saturday in May.	
For the best display,	3 00
For the 2d best do.,	2 00
HARDY AZALEAS.—To be awarded 4th Sat. in May.	
For the best display,	3 00
For the 2d best do.,	2 00
SHRUBBY PÆONIES.—To be awarded 4th Sat. in May.	
For the best six varieties,	5 00

For the 2d best do.,	\$4 00
For the best display,	3 00
HERBACEOUS PÆONIES.—To be awarded 2d Sat. June,	
For the best twelve flowers, having regard to the number of varieties,	5 00
For the 2d best do.,	4 00
For the best display,	3 00
PINKS.—To be awarded 3d Saturday in June	
For the best six distinct varieties,	4 00
For the 2d best do.,	3 00
For the best display,	2 00
HARDY ROSES.—To be awarded 3d Saturday in June,	
CLASS I.—For the best thirty distinct varieties,	8 00
For the 2d best do.,	6 00
For the 3d best do.,	4 00
For the best display,	3 00
CLASS II.—For the best twelve distinct varieties,	5 00
For the 2d best do.,	3 00
For the 3d best do.,	2 00
CLASS III.—HARDY PERPETUAL ROSES.—For the best ten varieties,	5 00
For the 2d best do.,	3 00
For the best display,	3 00
PRAIRIE ROSES.—For the best display, not less than four varieties,	4 00
For the 2d best do.,	3 00
CARNATION AND PICOTEÉ PINKS.—To be awarded 3d Saturday in July.	
For the best ten varieties,	5 00
For the 2d best do.,	4 00
For the best display,	3 00
MAGNOLIAS.—For the best display through the season,	3 00
For the 2d best do.,	2 00
HARDY RHODODENDRONS.—For the best display of the season,	3 00
For the 2d best do.,	2 00
DOUBLE HOLLYHOCKS.—To be awarded 3d Sat. in July	
For the best display,	3 00
For the 2d best do.,	2 00
For the 3d best do.,	1 00
DOUBLE BALSAMS.—To be awarded 3d Sat in Aug.	
For the best display,	3 00
For the 2d best do.,	2 00
For the 3d best do.,	1 00
PLOXES.—To be awarded 3d Saturday in August.	
For the best ten distinct varieties,	6 00
For the 2d best do.,	4 00
For the 3d best do.,	3 00
GERMAN ASTERS.—To be awarded 2d Sat in Sept.	
For the best display,	4 00
For the 2d best do.,	3 00
For the 3d best do.,	2 00

BOUQUETS, WREATHS, DESIGNS, &c.

Premiums to be awarded at the Annual Exhibition.

VASE BOUQUETS.—For the best pair suitable for the	
Bradlee Vases, the Bradlee Plate, valued at	\$10 00
For the 2d best do.,	6 00
For the best pair for the Society's marble Vases, ..	10 00
For the 2d best do.,	6 00
PARLOR BOUQUETS.—For the best pair suitable for the parlor,	8 00
For the 2d best do.,	6 00
For the 3d best do.,	5 00
For the 4th best do.,	3 00
POT PLANTS.—For the best display of not less than twenty Pot Plants,	12 00
For the 2d best do.,	10 00
For the 3d best do.,	8 00
For the 4th best do.,	5 00
COCKCOMB.—For the best six pots,	3 00
For the 2d best do.,	2 00
DALSAMS.—For the best six pots,	3 00
For the 2d best do.,	2 00
DAHLIAS.—To be awarded 4th Saturday in Sept.	
DIVISION A.— <i>Prmier Prize</i> .—For the best 12 dissimilar blooms, the Society's Silver Medal,	5 00
<i>Specimen Bloom</i> .—For the best flower,	3 00
<i>Various Colors</i> .—For the best yellow, buff, or orange; purple or maroon; crimson or claret; very dark; white; edged or tipped; scarlet; pink or rose, a premium of \$1.00 each,	8 00
DIVISION B.—CLASS I.—For the best twenty-four dissimilar blooms,	8 00

For the 2d best do. do.	\$5 00	VEGETABLES.—For the best display and greatest variety at the weekly exhibitions, during the season,	\$5 00
CLASS II.—For the best eighteen dissimilar blooms,	6 00	For the 2d best do.	3 00
For the 2d best do. do.	4 00	For the best display and greatest variety at the annual exhibition,	10 00
CASS III.—For the best twelve dissimilar blooms,	5 00	For the 2d best do.	6 00
For the 2d best do. do.	3 00	For any new variety of Vegetables suitable for the table, and worthy of cultivation, other than seedling potatoes,	5 00
HERBACEOUS—PERENNIALS.—For the best display through the season, the Society's Silver Medal,	5 00	CELERY.—For the best and largest blanchied, not less than six roots,	5 00
For the 2d best do.	4 00	For the 2d best do.	3 00
For the 3d best do.	3 00	CARROTS.—For the best exhibited,	2 00
ANNUALS.—For the best display through the season, the Society's Silver Medal,	5 00		
For the 2d best display,	4 00		
For the 3d best do.	3 00		
CAMELLIAS.—To be awarded 2d Saturday in Feb. for the best twelve varieties of cut flowers, with foliage,	8 00		
For the 2d best do.	5 00		
CHINESE PRIMROSE.—To be awarded 2d Sat in Feb. for the best six varieties in pots	3 00		
For the 2d best do. do.	2 00		
GREEN-HOUSE AZALEAS.—To be awarded 2d Saturday in March			
For the best six varieties in pots.	6 00		
For the 2d best do. do.	4 00		
SHRUBBY PLANTS.—For the best display, during the season,	5 00		
For the 2d best do. do.	4 00		
For the 3d best do. do.	3 00		
PREMIUMS TO BE AWARDED AT WEEKLY EXHIBITIONS.			
For the best six Pot Plants, of different varieties,	2 00		
For the 2d best do.	1 00		
For the best large Bouquet for vases or parlor, composed of flowers gracefully arranged,	2 00		
For the 2d best do.	1 00		
For the best pair of Bouquets, of any description,	2 00		
For the 2d best do.	1 00		
PREMIUMS FOR VEGETABLES.			
ASPARAGUS.—For the earliest and best, not less than three bunches,	5 00		
For the 2d best do.	3 00		
BEETS.—For the best (pure blood beet,) during the season, not less than twelve roots,	3 00		
BROCCOLI.—For the best three heads,	5 00		
BEANS.—For the best and earliest peck of string Beans,	3 00		
For the best and earliest Lima Beans, not less than two quarts,	3 00		
For the best and earliest variety of shell Beans,	3 00		
CUCUMBERS.—For the best pair under glass, previous to the first Saturday of June,	5 00		
For the 2d best do.	3 00		
For the best and earliest, of open culture,	3 00		
CAULIFLOWERS.—For the best and largest, during the season, not less than three heads,	5 00		
For the 2d best do.	3 00		
CORN.—For the best and earliest sweet Corn, not less than twelve ears,	3 00		
For the 2d best do.	2 00		
CABBAGE.—For the best drumhead Cabbage, during the season, not less than three heads,	5 00		
For the 2d best do.	3 00		
For the best Savoy Cabbage, during the season, not less than three heads,	3 00		
For the 2d best do.	2 00		
EGG PLANTS.—The best display, during the season, ..	3 00		
For the 2d best do.	2 00		
LETTUCE.—For the best six heads, before the first Saturday in July,	3 00		
For the 2d best do.	2 00		
POTATOES.—For the best new seedling, of superior quality, for the table,	10 00		
For the best and earliest peck, previous to Aug 1,	3 00		
For the 2d best do.	2 00		
PEAS.—For the best and earliest peck in June,	3 00		
RHUBARB.—For the largest and best, previous to the first Saturday in July, not less than twelve stalks,	5 00		
For the 2d best do.	3 00		
SQUASHES.—For the best pure Canada Squashes, not less than six in number,	3 00		
For the greatest variety exhibited, during the season,	5 00		
TOMATOES.—For the best and earliest, not less than one dozen,	5 00		

RULES AND REGULATIONS.

1. All Fruits, Flowers and Vegetables, offered for Prizes, are to be the growth of the competitors.

2. Articles exhibited for Prizes must be placed in the Stands by 11 o'clock, A. M.

3. Contributors of Fruits for exhibition, or premium, are requested to present the same in dishes or baskets of the Society, or in suitable baskets or boxes of their own.

4. After the articles are arranged, they will be under the exclusive charge of the Committees, and *not even the owners*, will have liberty to *remove*, or *touch* them until the exhibition is closed, when they will be delivered as the contributors may direct.

5. No Flower, Fruit or Vegetable, will be entitled to a prize unless it possesses points of superiority; and the Committees have the discretionary power of withholding Prizes if in their opinion the articles exhibited do not merit them.

6. Plants in Pots to be entitled to Prizes must give evidence of skilful culture, in the profusion of bloom, and the beauty, symmetry, and vigor of the specimens.

7. Successful competitors will be expected to furnish remarks on their mode of cultivation, *if peculiar*; and candidates for the Fruit Prizes will be required to present specimens for trial.

8. Premiums can only be awarded to exhibitors who have complied with the published Rules and Regulations.

9. No article for which a premium has been once awarded, can receive another during the season, with exception of such Fruits as are included in the "Special Prize List."

10. The Committees are authorized to award Extra Prizes for any new or rare Fruits, Flowers, Vegetables, Plants, or Designs of merit, and for which no Premium has been offered.

11. The Fruit Committees in making their awards, will consider the flavor, beauty, and size of the specimens; and each of these properties as compared with a fair standard of the variety.

12. In deciding on the merits of a Fruit or Vegetable, its value for general cultivation will be taken into account; but *superior* specimens of any good variety will not be excluded from Prizes, even though they may not flourish in all situations.

13. When specimens are presented for a *name*, the exhibitor is requested to communicate all the information he possesses, as to the *origin*, and the *local* appellation.

14. It will be the duty of the Committees to *exclude* from *Exhibition all inferior specimens*. Also, all such *Designs* as in their opinion evince an incorrect taste.

15. The Committees have power to change the time of exhibition, for any article, if an early or a late season renders such change necessary, giving seasonable notice thereof to the Society.

16. Any person to whom a Prize has been awarded, whether in money, medals or plate, may receive *either of like valuation*, at his option; all premium, not applied for within one year from the time of award, shall revert to the Society for its own use and benefit.

17. In order to afford the Committees an opportunity to examine and report on the articles exhibited, no other person can be admitted to, or remain in, the Hall, between the hours of eleven and a half and twelve, on the days of exhibition.

18. The Society earnestly invites the co-operation and competition of cultivators. The Prizes are *open to all*, and the Society is instituted for the *benefit of all*.

☞ The foregoing Schedule of Prizes, having received the approval of the Executive Committee, and the Regulations confirmed by a vote of the Society, is now published as the List of Premiums for the current year.

MARSHALL P. WILDER,
President.

E. C. R. WALKER,
Recording Secretary.

Horticulturist

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

VOL. II.

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No. 9.

If there is any one thing on which the usefulness, the true greatness, and the permanence, of a free government depends more than another, it is EDUCATION.

Hence, it is not without satisfaction that we look upon our free schools, whose rudimentary education is afforded to so many at very small rates, or often entirely without charge. It is not without pleasure that we perceive new colleges springing up, as large cities multiply, and the population increases; it is most gratifying to see, in the older portions of the country, men of wealth and intelligence founding new professorships, and bequeathing the best of legacies to their successors — the means of acquiring knowledge easily and cheaply.

There is much to keep alive this train of thought, in the very means of acquiring education. The fertile invention of our age, and its teachers, seems to be especially devoted to removing all possible obstacles, and throwing all possible light on the once difficult and toilsome paths to the temple of science. Class-books, text-books, essays and treatises, written in clearer terms, and illustrated with a more captivating style, rob learning of half its terrors to the beginner, and fairly allure those who do not come

willingly into the charmed circle of educated minds.

All this is truly excellent. This broad basis of education, which is laid in the hearts of our people, which the states publicly maintain, which private munificence fosters, to which even men in foreign lands delight to contribute, must be cherished by every American as the key-stone of his liberty; it must be rendered still firmer and broader, to meet the growing strength and the growing dangers of the country; it must be adapted to the character of our people,—different and distinct as we believe that character to be from that of all other nations; and, above all, without teaching creeds or doctrines, it must be pervaded by a profound and genuine moral feeling, more central, and more vital, than that of any narrow sectarianism.

Well, will any of our readers believe that this train of thought has grown out of our having just seen a most shabby and forbidding looking school-house! Truly, yes! and, as in an old picture of Rembrandt's, the stronger the lights, the darker also the shadows, we are obliged to confess that, with so much to be proud of in our system of common schools, there is nothing so beggarly and

disgraceful as the *externals* of our country school-houses themselves.

A traveller through the Union, is at once struck with the general appearance of comfort in the houses of our rural population. But, by the way-sides, here and there, he observes a small, one-story edifice, built of wood or stone in the most meagre mode,—dingy in aspect, and dilapidated in condition. It is placed in the barest and most forbidding site in the whole country round. If you fail to recognize it by these marks, you can easily make it out by the broken fences, and tumble-down stone walls, that surround it; by the absence of all trees, and by a general expression of melancholy, as if every lover of good order and beauty in the neighborhood had abandoned it to the genius of desolation.

This condition of things is almost universal. It must, therefore, be founded in some deep rooted prejudices, or some mistaken idea of the importance of the subject.

That the wretched condition of country school-houses is owing to a general license of what the phrenologists would call the organs of destructiveness in boys, we are well aware. But it is in giving this license that the great error of teachers and superintendents of schools lies. There is, also, God be thanked, a principle of order and a love of beauty implanted in every human mind; and the degree to which it may be cultivated in children is quite unknown to those who start leaving such a principle wholly out of sight. To be convinced of this, it is only necessary to inquire, and it will be found that in the homes of many of the pupils of the forlorn looking school-house, the utmost propriety, order, and method reign. Nay, even *within* the school-house itself, "heaven's first law" is obeyed, perhaps to the very letter. But to look at the exterior, it would appear that the "abbot of unreason,"

and not the "school-master," was "abroad." The truth seems to be simply this. The school-master does not himself appreciate the beautiful in rural objects; and, content with doing what he conceives his duty to the heads of his pupils, while they are within the school-house, he abandons its *externals* to the juvenile "reign of terror."

Nothing is so convincing on these subjects as example. We saw, last summer, in Dutchess Co., N. Y., a *free school*, erected to fulfil more perfectly the mission of an ordinary district school-house, which had been built by a gentleman, whose taste and benevolence seems like sunshine to warm and irradiate his whole neighborhood. It was a building simple enough, after all. A projecting roof, with slightly ornamented brackets, a pretty porch, neat chimney tops; its color a soft neutral tint; these were its leading features. But a single glance at it told, in a moment, that the *evil spirit had been cast out*, and the good spirit had taken its place. The utmost neatness and cleanliness appeared in every part. Beautiful vines and creepers climbed upon the walls, and hung in festoons over the windows. Groups of trees, and flowering shrubs, were thriving within its enclosure. A bit of neat lawn surrounded the building, and was evidently an object of care and respect with the pupils themselves. Altogether, it was a picture of a common district school which, compared with that we before described, and which one every day sees, was a foretaste of the millenium. If any stubborn pedagogue doubts it, let him come to us, and we will direct him on a pilgrimage to this Mecca, which is only eight miles from us.

It appears to us that a great error has taken deep root in the minds of most parents and teachers, regarding the influence of order and beauty on the youthful mind. Ah! it is precisely at that age—in youth—

when the heart is most sensitive, when the feelings are most keenly alive, than at any other; it is precisely at that age that the soul opens itself most to visions of beauty—that the least measure of harmony—the most simple notions of the graceful and symmetrical—fill it with joy. The few yards square, in which the child is permitted to realize his own vague ideal of a garden—does it not fill his heart more completely than the great Versailles of monarchs that of the mature man? Do we not forever remember with what transports of delight we have first seen the grand old trees, the beautiful garden, the favorite landscape from the hill-top, of our childhood? What after pictures, however grand—however magnificent—however perfect to the more educated eye, are ever able to efface these first daguerreotypes, printed on the fresh pages of the youthful soul?

It is rather because teachers misunderstand the nature of man, and more especially of boyhood, that we see so much to deplore in the exteriors of the houses in which they are taught. They forget, that in human natures there are not only intellects to acquire knowledge, but also hearts to feel and senses to enjoy life. They forget that all culture is one-sided and short-sighted, which does not aim to develop human nature, completely, fully.

We have an ideal picture, that refreshes our imagination, of common school-houses, scattered all over our wide country; not wild bedlams, which seem to the traveller plague spots on the fair country landscape; but little nests of verdure and beauty; embryo arcadias, that beget tastes for lovely gardens, neat houses, and well cultivated lands; spots of recreation, that are play-grounds for the memory, for many long years after all else of childhood is crowded out and effaced forever.

Let some of our readers who have an influence in this matter, try to work a little reform in their own districts. Suppose, in the first place, the school-house itself is rendered agreeable to the eye. Suppose a miniature park of elms and maples is planted about it. Suppose a strip of ground is set apart for little gardens to be given as premiums to the successful pupils; and which they are only to hold so long as both they and their gardens are kept up to the topmost standard. Suppose the trees are considered to be the property and under the protection of certain chiefs of the classes. And suppose, that, besides all this little arrangement for the growth of a love of order and beauty in the youthful heart and mind, there is an ample play-ground provided for the expenditure of youthful activity; where wild sports and gymnastics may be indulged to the utmost delight of their senses, and the utmost benefit of their constitutions. Is this Utopian? Does any wise reader think it is not worthier of the consideration of the state, than fifty of the projects which will this year come before it?

For ourselves, we have perfect faith in the future. We believe in the millenium of schoolboys. And we believe that our countrymen, as soon as they comprehend fully the value and importance of external objects on the mind—on the heart—on the manners—on the life of all human beings—will not be slow to concentrate all beautiful, good, and ennobling influences around that primary nursery of the intellect and sensations—the district school.

There is a strong illustration of our general acknowledgment of this influence of the beautiful, to be found, at the present moment, in this country more than in any other. We allude to our *Rural Cemeteries*, and our *Insane Asylums*. It is somewhat curious, but no less true, that no country seats; no

parks or pleasure-grounds, in America, are laid out with more care, adorned with more taste, filled with more lovely flowers, shrubs and trees, than some of our principal cemeteries and asylums. Is it not surprising that only when touched with sorrow, we, as a people, most seek the gentle and refining influence of nature? Ah! many a man, whose life was hard and stony, reposes, *after death*, in those cemeteries beneath a turf covered with violets and roses; but for him, it is too late! Many a fine intellect, overtaken and wrecked in the too ardent pursuit of power or wealth, is fondly courted back to reason, and more quiet joys, by the dusky, cool walks of the asylum, where peace and rural beau-

ty do not refuse to dwell. But, alas, too often their mission is fruitless!

How much better, to distil these "gentle dews of heaven" into the *young* heart, to implant, even in the schoolboy days, a love of trees; of flowers; of gardens; of the country; of home;—of all those pure and simple pleasures, which are, in the after life—even if they exist only in the memory—a blessed panacea, amid the dryness and dustiness of so many of the paths of life—politics—commerce—the professions—and all other busy, engrossing occupations, whose cares become, else, almost a fever in the veins of our ardent, enterprising people.

REMARKS ON SOME OF THE NEW PEARS.

BY SAMUEL WALKER, BOSTON.

[THE following notes on Pears will be perused with much interest by many of our readers. Mr. WALKER is looked upon as one of the *Chancellors* of the Court of Pomona in New-England,—from his long experience as a cultivator, his excellent judgment, and his position as chairman of the Fruit Committee of the Mass. Horticultural Society. ED.]

.....

A. J. DOWNING, Esq.—*Sir*: The frequent inquiries made by cultivators of fruit, as to the merit of many of the new and other varieties of PEARS, which have been fruited in this region during the past season, induce me to offer a few remarks for publication in the *Horticulturist*, as the result of my own experience.

As a whole, I think the new kinds of pears have been greatly over-rated, or the specimens presented have been but very "untoward" representations of many va-

rieties, bearing great and high-sounding names.

The past season may have been unfavorable to the production of fine sized and high flavored specimens of some of the new varieties; but it should be remarked of the kinds known as *first rate*, such for example as the *Seckel* and *Louise bonne de Jersey*, that the season never renders them worthless. I shall, therefore, assume the position, that when a well grown and fully ripened specimen of any new variety shall, at the first trial, prove indifferent or third rate, it is not to be expected that it will ever attain the rank of a first rate fruit; such kinds I consider as not worthy of cultivation, and shall therefore not notice them in this communication.

But I know some will say, why do you not give us an account of all—the good—the indifferent—the bad, that we may avoid the worthless? I would suggest to my fruit

growing friends, that *they* should examine the description and title of all the varieties of fruit trees they wish to purchase, as they would examine the boundaries and title to a valuable estate. If they believe themselves incompetent judges in these matters, then they should take counsel of some one, on whose judgment they can rely with confidence.

During the past season there have been placed, upon the tables of the Massachusetts Horticultural Society, upwards of fifty varieties of pears, which have not been previously exhibited in their hall. Among the leading contributors were Col. WILDER, president of the society, Messrs. MANNING of Salem, HOVEY of Boston, and several others. Many of the kinds were small and worthless. We hazard the opinion, that not more than five per cent. of all the new imported varieties of pears will be found worthy of extensive cultivation.

The following are among the new, or comparatively new, varieties of pears, which have been exhibited at the Boston shows during the season of 1847, viz :

HANNA'S.—This pear was found in the garden of Mr. HANNA, of Boston, some years ago; it resembles the Cushing in shape, and the White Doyenné in flavor; it is first rate. Season, September.

ROSTIEZER.—Introduced into this country by the late Mr. ROBERT MANNING; the fruit is small, juicy and high flavored; it deserves a place in every garden.

TYSON.—Originated near Philadelphia; a pear of great merit.

ANDREWS.—A native, probably of Dorchester, Mass.; it may be classed with the best.

HEATHCOT.—This delicious pear originated in the vicinity of Boston. Good specimens, fully ripe, are nearly if not quite equal to the *White Doyenné* in its palmy days.

PARADISE D'AUTOMNE.—An imported variety; it is very much like the *Beurre Bosc*. It is, in all respects, a first rate pear.

BEURRE D'ANJOU.—Imported from Europe by Col. WILDER, president of the Massachusetts Horticultural Society. This pear is nearly first size, handsome, juicy, delicious; it has no superiors, and very few equals.

COLMAR D'AREMBERG.—Specimens large and very handsome; it rots at the core; flesh coarse; flavor astringent and somewhat bitter. Col. WILDER has fruited this variety, under other names, for some two or three years. Our opinion at present is, that it will prove unworthy of cultivation as a *table* fruit in this country, notwithstanding its reputation as a fine pear in Europe.

EYEWOOD.—A seedling, raised by Mr. KNIGHT of England. Specimens rather small; flesh tender; juice sub-acid, and high flavored. Well worthy of cultivation. October.

LAWRENCE.—Originated in Long-Island. This variety may safely be added to every collection. November—February.

VICOMTE DE SPOELBERCH.—The specimens of this variety are generally small; but when highly and well cultivated, as they have been by Messrs. HOVEY, of Boston, they are nearly second size; flavor delicious. It is truly a first rate variety. November.

ESCHASSERIE.—This old pear is placed upon this list as deserving of extensive cultivation; flavor good, juicy, ripens well, and is in eating from January to May.

PRATT.—This variety has the reputation in Rhode Island as being a fine pear. From the specimens exhibited, we have been led to the same conclusion. It is fully second rate in size, handsome, tender and delicious. September.

ONONDAGA.—Large and handsome; juicy, but not high flavored. After frequent trials of specimens from various sources, it falls below our standard of a first rate pear. October and November. [This opinion is based upon specimens of the past autumn only. We have already stated that this fruit fell below its standard value during the past season; we trust it will redeem its character in 1848. Ed.]

KNIGHT'S SEEDLING.—A native of Rhode Island; large, handsome, delicious. The fruit should be gathered before it is ripe. It will, probably, prove to be a pear of the first quality. September.

MONARCH (KNIGHT'S).—This pear is represented in the Catalogue of the London Horticultural Society as of great merit—the *very best* of Mr. Knight's seedlings; the specimens hitherto shown as the Monarch, have been unworthy of cultivation. The last (making in all four kinds,) was a specimen presented by Hon. J. S. CABOT, of Salem, from trees imported by Messrs. Ho-

VEY & Co., Boston; this also proved to be a worthless variety. Scions of the Monarch, from the London Horticultural Society's Garden, and from other fruit bearing trees in England, have been received by the president of the Massachusetts Horticultural Society. We also have five trees of this variety, from as many sources, and also a promise of scions (this month) from a fruit bearing tree, in one of the best private gardens in the vicinity of London, with a description of the fruit. Hence, we trust the true Monarch will (we fully believe it is already in the hands of many cultivators in this country,) find its way into our gardens, and prove worthy of the reputation it has in Europe.

I have omitted to notice several new native seedling pears, which have claimed my attention the past season. I may, probably, describe some of them another season, when their qualities shall have been more fully developed. Your friend,

SAMUEL WALKER.

Roxbury, Mass., Jan. 14th, 1848.

NOTES ON PEACHES, WITH A SELECT LIST BEST ADAPTED TO N. ENGLAND.

BY ROBERT MANNING, SALEM, MASS.

[We have great pleasure in presenting the following notes to our readers. They are the result of many years experience of father and son, in Mr. MANNING'S widely known "Pomological Garden." Ed.]

.....

ALTHOUGH the apple and pear, from being in eating in their different varieties almost throughout the year, are more valuable than the peach, which does not offer the same extent of season, I do not hesitate to express a decided preference for the flavor of the peach above any other fruit; and I firmly believe that, with proper attention to the

cultivation of the trees and selection of the best varieties, the peaches of New-England are unsurpassable.

I have, in the specimen grounds of the Pomological Garden, nearly 150 kinds of peaches; and the subjoined list is composed of those which, out of 70 that have fruited, appeared best adapted to this climate. I begin with a list of ten varieties, arranged in the order of their ripening, which, after several years experience, I have found to unite in the highest degree the qualities of beauty, size and flavor in the fruit; and productiveness, vigor and hardiness in the tree.

1. **EARLY YORK.**—The *true* Early York I consider at the head of all early peaches, and deserving the popularity which it has obtained. It may be known by its glandless leaves, large flowers, and fruit inclining to oval, with a small point at the apex which is never sunken. The tree is vigorous and productive; and for a variety without glands, remarkably free from mildew. Ripe here in the latter part of August. The Large Early York, of New-Jersey, I have found less productive, and no more vigorous than the true kind.

2. **WALTER'S EARLY.**—Ripens the latter part of August and first of September, immediately succeeding the Early York. Fruit very fine and juicy; in shape globular, often a little flattened. Leaves globose, flowers small.

3. **GEORGE THE FOURTH.**—Although this variety is only moderately productive, it should by no means be omitted; being for delicacy of flavor unequalled by any other peach. At maturity during the first part of September. The tree makes a large round spreading head. Leaves globose. Flowers small.

4. **MORRIS'S RED RARERIBE.**—This variety is so similar, in general appearance, to many others of the same season, as to have occasioned some confusion. It is, indeed, difficult to name any characteristics which shall at once distinguish it from all others. I believe it possesses all the qualities necessary to give it a place in the first rank. Season the early part of September. Leaves globose. Flowers small.

5. **CRAWFORD'S EARLY.**—Of the finest flavor among the yellow fleshed peaches, and well known as unsurpassed for size and magnificent appearance. Ripe from the 10th to the 15th of September. Leaves globose. Flowers small.

6. **NIVETTE.**—Taking into consideration

all the qualities, especially the flavor of this old French peach, which has been in cultivation since the time of Monsieur de la Quintiney, it has yet to encounter its superior among the modern sorts. In season about the 20th of September. Tree of upright growth. Leaves globose. Flowers small.

7. **BERGEN'S YELLOW.**—Is to my taste the finest flavored of all yellow fleshed peaches, as well as one of the handsomest. Shape rather irregular oval, compressed on the sides. Tree very vigorous, and foliage of the most luxuriant description; bright glossy green, crumpled, and the midrib contracted; giving to the leaf a curled appearance. Ripe the latter part of September. Leaves with reniform glands. Flowers small.

8. **LATE ADMIRABLE.**—I have never been disappointed of a good crop of large, handsome and delicious peaches from this tree, even in the most unfavorable seasons when all others have failed. Last of September and first of October. Leaves globose. Flowers small.

9. **OLDMIXON CLINGSTONE.**—No collection of peaches is complete without one good juicy Clingstone; and I have no hesitation in pronouncing the Oldmixon the *best* of the half dozen Clingstones which I cultivate. Last of September and first of October. Leaves globose. Flowers small.

10. **CRAWFORD'S LATE MELACOTON.**—Among the late peaches, unrivalled for every good quality. Last of September and first part of October. Leaves globose. Flowers small.

These ten kinds, I consider "*unimpeachable.*"

If required to select *one variety*, combining in the greatest degree all desirable qualities, I should choose the CRAWFORD'S EARLY.

For two trees, my choice would be **EARLY YORK** and **CRAWFORD'S EARLY**.

For the best six, **EARLY YORK**, **WALTER'S EARLY**, **CRAWFORD'S EARLY**, **NIVETTE**, **BERGEN'S YELLOW** and **CRAWFORD'S LATE**.

If a greater variety be desired than is described above, it can be made by additions from those noticed below; many of which are of great excellence, though not equal to those already mentioned.

11. **THE APRICOT PEACH**.—Yellow, with sometimes a tinge of red or a few red spots, and much resembling an Apricot in external appearance. Juicy, and of fine flavor. Of medium season. Leaves reniform. Flowers large.

12. **COOLEGE'S FAVORITE**.—This fine peach, otherwise first rate, I have found a little inclined to rot. It is rather early. Leaves globose. Flowers small.

13. **COLE'S EARLY RED**.—Productive, and would be a good kind for market, but is injured by being sometimes a little dry. Ripe immediately after the Early York. Leaves globose. Flowers small.

14. **CAREY'S MAMMOTH CLING**.—A good variety, which I received from Mr. T. Hancock, of Burlington, N. J. Rather oval in shape; of good size, though not so large as its name would seem to indicate. Flesh white and well flavored. Ripe the last of September and first of October. Leaves globose. Flowers small.

15. **CLINTON**.—Of good flavor, productive and very large—a good variety for market—in general appearance, and the depression of the summit resembling the Grosse Mignonne, but larger. Tree of spreading, irregular growth. Ripe the first half of September. Leaves globose. Flowers large.

16. **GROSSE MIGNONNE**.—This fine flavored peach I have found a little inclined to rot; but to counterbalance this, it is a hardy variety, and will often produce a crop of fruit

in an unfavorable season when others fail. On the whole, I consider it, though a desirable sort, surpassed by some of our native peaches. It is easily known by its rather grayish appearance, summit always depressed, and small stone. Growth of the tree more upright than that of any other peach. From the 10th to the 15th of September. I believe it is this variety which has been cultivated in New-England as the *Royal George*. Leaves globose. Flowers large.

17. **HASTING'S RARERIPE**.—I do not find this capital peach described in any pomological work, and am not informed of its origin. It was received here from Mr. J. A. KENRICK of Newton, Mass., and I presume it is a native of that vicinity. Above medium size, form round, often a little flattened; yellowish white in the shade, having a purplish red cheek on the sunny side, shaded off with specks of the same colour. Productive, juicy and of delicious flavor. Middle of September. Leaves globose. Flowers small.

18. **JOSE SWEET**.—Received from Mr. S. LYMAN of Manchester, Conn. A peach of remarkably delicious flavor, but not very attractive exterior; being colored of a greenish white, with a dull red cheek. In general appearance, it is much like the Washington. Last of September and first of October. Leaves globose. Flowers small.

19. **MORRIS'S WHITE**.—Like the preceding, less beautiful than good. Middle to the last of September. Leaves reniform. Flowers small.

20. **JACQUES, or JAQUISH**.—Very large; skin very downy, dull orange, with a dull red cheek. Of good flavor, productive and profitable for market, as it may always be depended on for a good crop. Last of September. Leaves reniform. Flowers small.

21. **PRESIDENT**.—A well known variety, productive and profitable. In shape rather

oval. Last of September. Leaves globose. Flowers small.

22. GREEN RARERIPPE.—Productive, and of fine flavor. Size medium. Ripe the middle of September. Leaves globose. Flowers small.

23. RED CHEEK MELACOTON.—As a sure and regular bearer, this well known peach is not excelled by any of the numerous seedlings raised from it, though some may surpass it in size and beauty. Last of September and first of October. Leaves globose. Flowers small.

24. STRAWBERRY.—A good early variety, not above the second size, but first rate in flavor. Last of August and first of September. Leaves reniform. Flowers small.

25. WASHINGTON.—Of fine flavor, and tolerably productive. Last of September. Leaves globose. Flowers small.

26. COLUMBIA.—This singular peach, when in perfection, presents a rich and beautiful appearance, and is of delicious flavor. When cut open, the fruit often shows a streak of red next to the skin. The tree being only a moderate bearer, invariably exhibits a healthy and vigorous appearance. Last of September and first of October. Leaves reniform. Flowers small.

27. LEMON CLINGSTONE.—Well known by its oval shape and projecting *mamelon*. In flavor, second only to the Oldmixon Cling. Last of September and first of October. Leaves reniform. Flowers small.

28. KENRICK'S HEATH.—A very strongly marked variety, which, though not of the finest flavor, is desirable for its size and productiveness. Flesh red at the stone,

which is long and large. Last of September. Leaves reniform. Flowers small. [Third rate here. ED.]

29. ENGLISH SWAESH.—Not a good bearer, but very delicious. Ripe from the 10th to the 15th of September. Leaves globose. Flowers small.

30. WELD'S FREESTONE.—Large, roundish oval, greenish white with some red, productive and of good flavor. From the first to the middle of October. In a late or unfavorable season, it will not always ripen; but is then excellent for preserving. Leaves reniform. Flowers small.

In selecting the first ten kinds, I have had in view those best adapted for a garden; but by substituting the *Cole's Early* and *Jacques* in the places of George the Fourth and Nivette, the list would be composed of the best kinds for the orchard and market.

If it is thought desirable to extend the peach season by the addition of an earlier kind than the *Early York*, I would recommend the *Early Sweetwater*, which is very sweet and juicy, but not a good bearer; and the tree is neither hardy nor vigorous. A variety possessing all the good qualities of the *Early York*, but earlier, is still a desideratum.

Among my specimen trees are many varieties imported from England, which have much disappointed my expectations. They are not remarkable for fine flavor, while they are greatly deficient in beauty; and as a whole, much inferior to the seedlings raised in this country. Yours respectfully.

ROBERT MANNING.

Salem, Mass., February, 1843.

"WARD'S CASES"—THE BEST MODE OF GROWING PLANTS IN ROOMS.

BY DR. WM. W. VALK, FLUSHING, L. I.

IN our communication for the Horticulturist for January, the growing of plants, in what are called "*Ward's Cases*," was alluded to in terms of approval, and the remark followed, that "for the cultivation of plants in the parlor and drawing-room, these cases are admirably adapted; and if made with taste, as they should be for such uses, and filled with carefully selected specimens, they would soon become fashionable and very much sought after." Your correspondent, E. G., of Bridgewater, Mass., has, in the note you have sent me, been pleased to notice our remarks with interest, and, writing you on the subject, desires to know how the cases are constructed? What kind of plants may be most successfully grown in them? Will the plants bloom as freely in the cases as out of them? And whether or not a door is necessary, "so that some of the pots may be exchanged from time to time, to give variety?"

With great pleasure we now reply to these queries, and shall give your readers all the knowledge we have, both acquired from the experience of others and the results of our own. How are the cases constructed? We may best answer this in a comprehensive way by saying—have them made of any size and pattern you please, plain or ornamental, of wood, brass, iron, zinc, or bronze. There is no rule to go by; the owner is to consult his fancy, and keep in view the position he intends the cases to occupy. But we must be more specific to be better understood, and give a brief description of the case we have, and a drawing of one also. Our case is made of black walnut; it is four feet long, two and a half feet wide, and three feet in height to the

top of the roof. It is perfectly plain, and as light as possible, consistent with the requisite strength. The bottom of the case is in the form of a box six inches deep; at each corner an upright piece is framed in, and between these, other pieces like the sash of a window. The roof is made in the same manner, with a ridge piece, and a double pitch of about twenty-five degrees. For putting in or taking out the plants, our roof lifts off entirely, having a pin and socket at the four corners; but it is just as convenient to place a door where it is wanted when the case is made. The bottom and sides of our case are lined with zinc; and there are eight holes in it to allow superfluous water to drain off. It stands on brass castors; but it would have been better to have had it made with legs, sufficiently long to bring the case up to the bottom, or sill of the window: our case stands on a table. The glass used is clear and strong, and puttied on the inside. From this description, a case just like ours may be easily constructed; but in order to make the matter as plain as possible, we give a drawing of it, Fig. 50. If a more elegant and ornamental structure is desired, the pattern, Fig. 51, is just the thing. This, executed in bronze or gilt copper, would be beautiful; and the glass used should be "plate glass" in single pieces for the sides, ends, and the top. Varying the shape and style to suit the taste of the parties who have one or more "*Ward's Cases*" made, they can be large or small, plain or elaborately elegant, as they may desire. For putting in or taking out the plants, a door must be made where most convenient, and sufficiently large to do so with the most perfect facility.

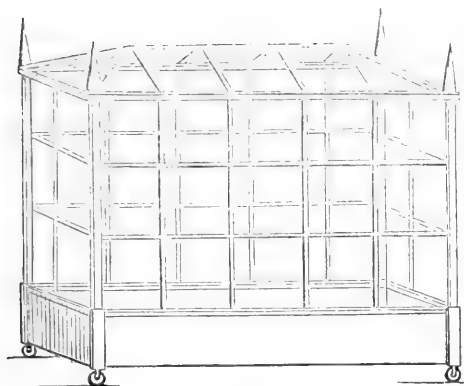


Fig. 50.—Ward's Case

We have thus answered the query—how are the cases constructed, and proceed to the second question—what kind of plants may be most successfully grown in them? We do not know that we can better answer this question, than by giving an extract from a letter, written to Dr. Lindley by Dr. Harris, of Dumfries, a devoted horticulturist, and a very successful grower of plants in these “miniature green-houses.”

“I am convinced they will come more and more into general use, the better their capabilities are developed. The best guide to find out what may be done by them, is to know what has already been done. I am therefore induced to send you some account of mine; reserving a more particular description to some future time. I have, at present, in bud and in bloom, *Cattleya Forbesii*, *C. Loddegesii*, *Gloxinia maxima alba*, *Gloxinia speciosa*—two plants, *Achimenes coccinea*, *A. longiflora*, *Thunbergia alata*, white and pink double *Oleanders*, *Cattleya crispa*, *Cypripedium insigne*, *Dendrobium cuculatum*, *Leptotes bicolor*, *Brassia Lanciana*, *Oncidium flexuosum*, *O. papilio*, *Maxillaria stapelioides*, *Stanhopea grandiflora*, *Caloglyne fimbriata*, *Oncidium viperinum*, *Dendrobium speciosum*, *D. cupreum*, *D. fimbriatum*, *D. pulchellum*, *Maxillaria Harris-*

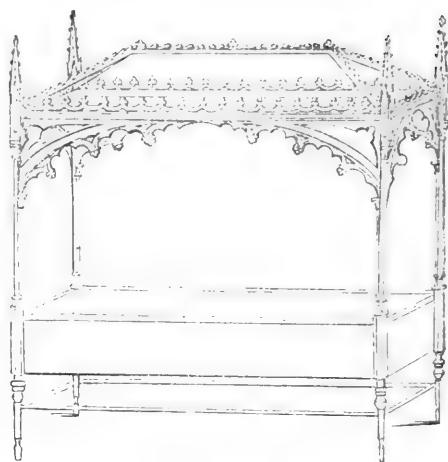


Fig. 51.—Ward's Case.

sonia, *Crinum longifolium*, *Gloxinia rubra*, *Gesneria elongata*, *Lalia anceps*, *Stephanotis floribundus*, *Hoya carnea*, *Cypripedium venustum*, *Æceocladius maculata*, and a *Galeandra*. So congenial does the atmosphere appear to be, that most of the plants are growing vigorously. *Gloxinia* leaves take root in three weeks, and form tubers the size of a pea in six. *Portulacca Thellusonii* and *Petunia magna rosea* rooted in a fortnight. You will see by the above list that my box is not a little elegant drawing-room ornament; it stands six feet high, is four feet broad, and two feet wide; has a door at one end, two shelves inside, and as many hooks at the top as possible for suspending the *Orchidaceæ*. During the summer, the temperature has never been below 65°, Fah.; and two hours sunshine raises it to 90°. The window in which it stands looks S.S.W.” In addition to the above, Dr. Lindley thus replies to a correspondent's inquiries: “Any plants will succeed in these contrivances (Ward's Cases) under good management, provided they do not grow too large. Everything depends on a correct appreciation of their principle. Some ignorant persons fancy they must be air-tight,

which is both absurd and impossible. We have seen growing in these cases *Linnæa borealis*, Primroses, Ferns, Geraniums, Dentarias, *Mimulus moschatus*, Fuchsias, Cacti, Mosses, Camellias, all sorts of Alpine plants, Crocusses, Hyacinths, Azaleas, Winter Aconites, and many more."

To these remarks of Drs. Lindley and Harris, we would add, that roses, small orange trees, or *any other plants of suitable size*, may be successfully and beautifully grown, kept free from dust, and in an atmosphere uniformly moist and congenial to vegetable development. Those who can procure Mr. Ward's pamphlet* should do so. It contains all the information that can be given, and is written in a plain, intelligible style. Exclusion of the air was not the object aimed at by Mr. Ward in his admirable contrivance. He could not have effected this in any other way, than by hermetically sealing every chink and crack. What he wanted was uniform moisture, a still atmosphere, and exclusion of dust and soot; these ends he has secured.

In the case described by Dr. Harris, the greater number of the plants were *Orchideæ*. These we have italicized, and consider them well worthy the attention of our amateur gardeners; not only for their singularity, but also for their exquisite beauty and the sweet odor of their flowers. They are easily grown in pots, baskets, shells, or on rough blocks of wood; in this last form, they are very interesting and thrive admirably.

Will the plants bloom as freely and fully in the cases as elsewhere? Yes, quite as much, if not more so; and the beauty of the flowers is greatly heightened by the clean and healthy looking foliage. To put in or take out the plants, a door is necessa-

ry, and may be placed wherever most convenient.

To your correspondent's inquiries we have now replied, and given drawings by which he or any one else can have a plain or very handsome Ward's Case constructed. As E. G. says,—“it is the very article needed in our parlors and sitting-rooms, to take the place of the pots and other vessels by which our windows are now encumbered and sullied.”

There are, however, says Dr. Lindley, some difficulties in the way of growing plants in close moist cases, which amateurs unacquainted with the nature of vegetable life are unable to overcome; but which a sensible gardener, who does not belong to the “drowsy” school, would easily remove. Among these difficulties, the principal one is the adjustment of the amount of moisture to which the plants are exposed in the cases; also to the surrounding heat, and to their own proper nature. Another is the prevention of dew upon the inside of the glass, by which the interior is frequently entirely hidden. These are practical embarrassments that must be met by the skill and ingenuity of cultivators. As each plant which is put in a Ward's Case requires, or can bear, a greater or less amount of moisture, the regulation of the quantity of this agent becomes highly important to their health and vigor. Intelligence and reflection must lend their aid in guarding against an excess or deficiency; and this can only be effectually accomplished by careful observation and close watching. As to the deposit of dew upon the inside, we may remark, that since this is owing to the *outside* of the case being colder than the air that it surrounds, the only course to take is either to warm the external air by some means, or to open the door in the case for a short time; and as the latter is the more

* On the Growth of Plants in Closely glazed Cases; by N. B. Ward. 8vo. 1842. Wiley & Putnam may have it.

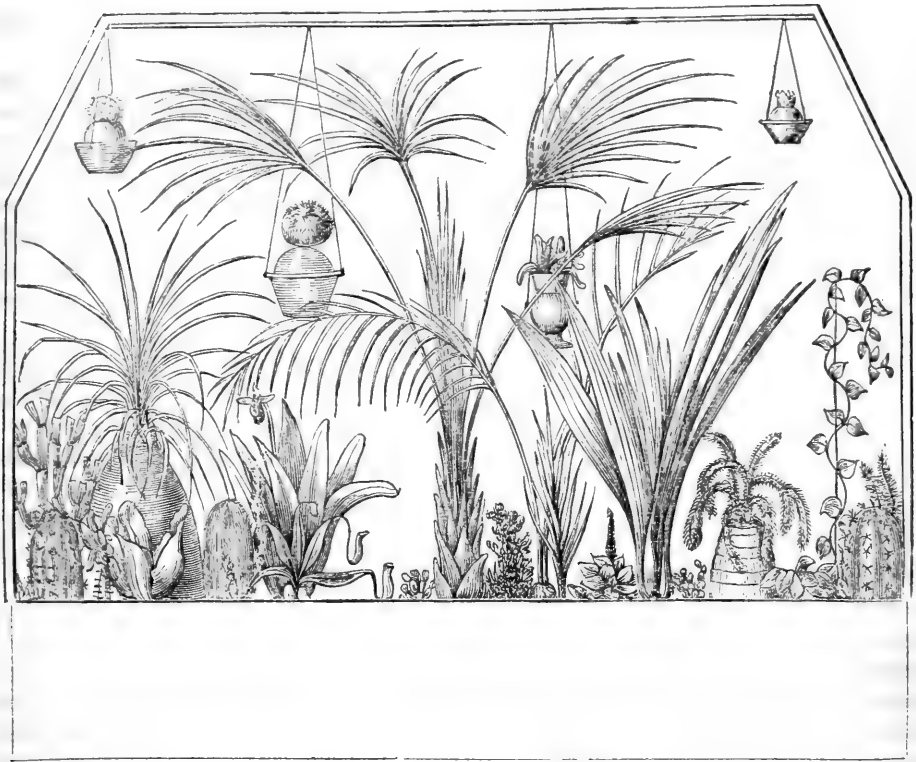


Fig. 52.—Longitudinal Section, showing the Plants growing in the Soil, and suspended from the Brass Rod under the Top of the Glass Case.

easy, and is quite efficient, it will be the more generally adopted. Opening the door is an advantage to the plants, if not continued too long.

Supposing the case to be ready for use, introduce the plants according to their size, the tallest in the centre, the least in height surrounding them. Regulate the distances between the pots, so that no plant touches its companion, and fill up between with fresh green moss from the woods. This arrangement will exercise the amateur's taste and skill, and give a finish to the interior of his cases quite refreshing to the eye. When all this is done, give the whole a good watering, over the leaves as well as the soil, allow the superfluous water to drain off, wipe the inside of the glass perfectly

dry, and close the door. The case will now be placed at the window selected for it, and once a week alternately, each side turned to the light. At first, the moisture rising from the moss and soil will become pretty freely deposited on the glass inside; but this can always be removed by *opening the door* for a half hour or less. To some extent, this deposit of dew will be constantly taking place; but as the way of removing it is easy, it can bear no weight as an obstacle to the successful management of the cases. The only *real* difficulty is in the regulation of the amount of moisture to which the plants are always subjected; not unfrequently the atmosphere within the case being at or near the point of saturation. To guard against an excess of this potent

agent, both for good and evil, the amateur or gardener must be vigilant. Let the plants be looked after every day, dead leaves removed, and by the regulator (*the door*) increase or diminish the moisture by shutting close, or opening more or less, for a longer or shorter time.

When the plants are put in, see that they are clean *and free from insects*; for these increase rapidly within the case, and then it is not so handy to get at them.

How often shall the plants be watered? No rule can be laid down for this operation as to time, for it is regulated by circumstances. If the case is seldom opened, and then only for a few minutes, once a month will be sufficient. As long as the plants appear thriving, and none of them exhibit signs of flagging for want of water, so long may its application be withheld; whether it be one, two, three or six months since they received any. Always use *rain water*, of mild temperature; no other is fit for plants in pots.

It will perhaps be as well to say here, that when Mr. Ward first constructed his cases, the plants grown in them were not in pots, but planted in the soil which filled the bottom of the case; and such is the plan now with many persons who use them. It

is not, however, a proper one for the drawing-room; the pots are much better, as in this way, they "can be exchanged from time to time to give variety," as E. G. suggests.

In conclusion, we recommend to all parties interested, a trial of this method of growing plants. If managed properly, they cannot fail to afford the highest pleasure; and the cases being ornamental, add materially to the beauty and finish of the apartment.

WM. W. VALK, M. D.

Flushing, L. I., January 28, 1848.

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[*Ward's Cases* have been, for the last few years, quite popular among cultivators of plants in cities abroad. It is surprising, to those who have not seen them, with what facility and elegance a small collection of plants, even of species which are the most difficult to cultivate in the impure atmosphere of large towns, are grown in these closely-glazed cases. For the windows of the drawing-room, one of these cases is, as our correspondent points out, beautifully adapted. We add to his illustrations another from *Loudon's Magazine*, Fig. 52, showing a collection of rare exotics, growing in the case. ED.]

SELECT FRUITS FOR THE NORTH.

BY THE LEADING HORTICULTURISTS OF MAINE.

A. J. DOWNING, Esq.—With the view of publishing in your *Horticulturist*, a catalogue of fruits, for the use and guidance of all who are planting, or who design to plant orchards at the north, I have long been searching for such lists as will present exclusively the names of all the hardy fruits, which are known by experience to thrive on this continent in the region north of lati-

tude 43°. This includes almost the whole of the British dominions, all the state of Maine, and nearly all of New-Hampshire and Vermont, and a portion of New-York.

For this purpose, I have addressed a circular to a few experienced cultivators, and to others who have bestowed much attention upon the subject, asking for their opinions, based upon their own experience and

observation. They are gentlemen in whom the utmost confidence may be placed. HENRY CORSE, Esq., of Montreal, and JOSEPH PINNEO, Esq., of Hanover, N. H., are well known. The Hon. EPHRAIM GOODALE, of Orrington, Judge POND, of Bucksport, and Gen. HERRICK, of Hampden, Me., have been cultivators in this vicinity for nearly 40 years. The others are younger men; but they have given much attention to the subject.

I herewith forward you a copy of my circular and their several answers, which you are at liberty to make such use of as you may think will be most beneficial to the public. It is very desirable that we should have as much light as possible on a subject of so much importance, and one which is fortunately attracting very general attention, at least in this section of Maine. I therefore hope, that, as several fine orchards and nurseries have lately been commenced in this vicinity, their proprietors will hereafter favor the public with pomological communications in publications which circulate in this northern section, in order that the example of their laudable enterprise, and the results of their experience, may be extensively known, properly appreciated and practically improved. Some evidence of an increasing interest in one branch of the subject may be found in the fact, that the number of imported gooseberry plants which have been set in the gardens of Bangor and vicinity within two years past, is at least fifty fold greater than the whole number previously planted. Perhaps the same may be said also of plum trees. It is believed that a still greater supply will be requisite to meet the demand for the coming spring; and large orders have accordingly been sent to England, for the choicest gooseberry plants to be delivered here before the time for planting. It has been the great error of early settlers generally, in all our

states, to waste their time and labor in raising *natural* fruit trees of almost worthless kinds, instead of improving them by the best varieties of grafts. It may be said they did their best, at a period when neither the requisite knowledge nor the best varieties of trees were easily accessible. Let us, then, do our best also, but not *likewise*; for neither of these excuses can be pleaded in our day and generation. Horticultural societies and publications have accumulated and distributed a large amount of knowledge, which has already planted the nursery, set the grafts, and matured the orchard; thereby rendering accessible to all, through the increased facilities of communication, and the easy transportation of the present time, both the knowledge and the ready means of easy improvement.

In Bangor and vicinity, trade and lumbering have so completely engrossed the attention of the early settlers, that, until within a few years, the cultivation both of natural and grafted fruit has been, with rare exceptions, entirely neglected. Indeed, it has been a common opinion that our climate is wholly unsuitable for fruit cultivation. But on this point experience has, of late, effected a complete revolution of public sentiment. Many experiments have been tried, and the results are so satisfactory that numerous individuals on the Penobscot river are inspired with the same enthusiasm on the subject that prevails in Boston and the vicinity. We may, therefore, reasonably expect, (and, notwithstanding the erroneous ideas which have generally prevailed in regard to "Down East," we confidently predict,) that in a very few years, the fruit grown in Maine will be found equal to any other, not even excepting that of Massachusetts or of New-York, particularly for *exportation*.

The first inquiry here is, what will best suit our soil and climate; second, the flavor of the fruit, or its value for the kitchen; third, its productiveness; fourth, the health and thriftiness of the tree.

The Jefferson Plum, among other fruits, has fruited with me for two years past. It is highly valuable on this river, proves to be productive, and justifies all you say of it in your work on "Fruits and Fruit Trees." I think it has no superior in the plum catalogue.

The selections made by my correspondents would, as you are aware, be essentially varied were they to select for other portions of the United States. When other new varieties shall have shown fruit, and been fully proved and tried, we shall be able to select a more perfect catalogue of hardy trees and plants for the north; and I trust that our march of improvement will be rapidly onward. Respectfully yours.

HENRY LITTLE.

Bangor, Maine, Jan. 2d, 1848.

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CIRCULAR.

Bangor, Dec. 20, 1847.

If "time is money," it may be said that economy in the use of time and means is money. Endeavoring to practice upon this principle, I have for several years been at considerable pains to introduce to the people, in this part of the state of Maine, the choicest varieties of such fruits as facts and experience have indicated to be best suited to our soil and climate. Knowing that much still remains to be done, I would avail myself of such additional experience as those engaged in cultivating fruits can furnish me. My object now, is to ascertain what fruits are best adapted to the soil and climate of Maine, New-Hampshire, Vermont, the northern part of New-York, New-Brunswick and the Canadas. Also, to inquire in what kind of soil your orchard or

nursery is planted. Our Bangor soil is a gravelly and clayey loam; the clay often preponderating.

If you were restricted to only three apple trees, what varieties would you select for your location?

If restricted to six trees, what varieties?

If restricted to twelve trees, what varieties?

What number of sweet apple trees would you plant to the hundred?

Pear, plum and cherry trees, and gooseberry plants, the same questions throughout except the last.

Have you cultivated (unprotected) with success any one or more varieties of the peach, quince, grape, or other valuable fruits not here enumerated, that will stand the rigors of our climate? If so, please name them, and the varieties.

Do you cultivate the White Dutch Currant, Myatt's Victoria, Downing's Colossal and Wilmot's Early Red Rhubarb? If so, what is your estimate of each of them? What three varieties of strawberries do you consider best for our climate? Respectfully yours.

HENRY LITTLE.

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Col. LITTLE has sent us the replies to the foregoing circular, embodying a considerable amount of valuable information for the northern fruit grower. We would very cheerfully print these answers entire, did they not require more space than we have at our disposal for a subject which, though largely important at the north, is less interesting to our numerous readers in other parts of the Union. We shall, therefore, be obliged to content our readers by presenting an epitome of the experience and opinions of the gentlemen who have replied to Col. LITTLE's circular.

One of the veteran cultivators of Maine is the Hon. EPHRAIM GOODALE, of Orring-

ton. For more than forty years his attention has been largely directed to the collection and testing of hardy orchard fruits on the Penobscot river. His letter is very brief, and relates chiefly to the apple. We give it nearly entire :

"This climate will not permit us to grow southern fruits ; but we can supply all seasons easily with good apples, as well as many of the best pears, plums, gooseberries and currants. There is no doubt, also, that more experience will enable us to cultivate successfully many fine cherries, grapes, peaches, etc.

"I shall, however, confine myself at the present moment, to *apples* ; as I consider them, for *Maine*, worth all the other fruits. You inquire, 'if restricted to three varieties, which would I select ?' I answer—

"*Williams' Favorite*, *Ribston Pippin*, and *Roxbury Russet*. But as the limit is almost too small, even for a very small collection, I should wish to add the *Porter* and the *Gravenstein*, to keep up the succession and afford a constant supply. These five I would recommend as the smallest collection to be planted on our Penobscot river. If six were desired, I would add to the list the *Early*, or *Sweet Bough*. For twelve varieties, I would say—

<i>Early Harvest</i> ,	<i>Maiden's Blush</i> ,
<i>Williams' Favorite</i> ,	<i>Gravenstein</i> ,
<i>Sops of Wine</i> , [' <i>Bel's</i> '	<i>Garden Sweet</i> ,
<i>Early</i> ,' as known here.]	<i>Ribston Pippin</i> ,
<i>Sweet Bough</i> ,	<i>Johnan Sweeting</i> ,
<i>Porter</i> ,	<i>Roxbury Russet</i> .
<i>Golden (or Or.) Sweet</i> ,	

"This will furnish a supply through the whole season ; and as they have been *thoroughly proved* here, their merits can be depended on. There are many new varieties not yet fully proved, which may, probably, excel some of the above.

"The proportion of sweet apples in an orchard of one hundred trees, depends on

the location and intentions of the grower. Some men would plant fifty, others only five. When deprived of a good market, and when it is desirable to fatten stock with this fruit, I would recommend a large proportion of sweet apples."

The following interesting notes, in reply to the circular, are from a very intelligent cultivator of our acquaintance, Mr. S. L. GOODALE, Saco, Maine :

"I would recommend the following, as the best apples for Maine culture :

"Best Three. *Williams' Favorite*, (summer,) *Gravenstein*, (autumn,) *Baldwin*, (winter.)

"If the *Baldwin* can be grafted on healthy grown trees it does well ; but young trees from the nursery are *tender*.

"For the best six, add to the above, *Rhode-Island Greening*, *Yellow Bellflower*, and *Ribston Pippin*.

"My selection of twelve, would be composed as follows :

<i>Early Bough</i> ,	<i>Ribston Pippin</i> ,
<i>William's Favorite</i> ,	<i>Fameuse</i> ,
<i>Porter</i> ,	<i>Yellow Bellflower</i> ,
<i>Gravenstein</i> ,	<i>Baldwin</i> ,
<i>Golden Sweet</i> ,	<i>Danvers' Winter Sweet</i> ,
<i>Rhode-Island Greening</i> ,	<i>Roxbury Russet</i> .

"For the best three pears—*Dearborn's Seedling*, (summer,) *Flemish Beauty*, (autumn,) *Vicar of Winkfield*, (winter.)

"For the six best—add *Fulton*, *Cushing* and *Belle Lucrative*.

"For the twelve best—add *Frederick of Wurtemberg*, *Dix*, *Heathcot*, *McLaughlin*, *Golden Beurre of Bilboa*, and *Beurré Bosc*; and for cooking only, *Black Pear of Worcester*.

"Plums—best three—*Jefferson*, *Prince's Imperial Gage*, *Purple Gage*.

"For the best six—add *Washington*, *Diaprée Rouge* and *Coe's Golden Drop*.

"For the best twelve—add *Green Gage*,

Yellow Gage, Lombard, McLaughlin, Red Gage, Brevoort's Purple.

"The only cherries which prove *hardy* and *good* with me are the *Downton, Downer's Late, Elton, Black Eagle* and *May Duke*.

"*Myatt's Victoria* and *Early Red* (Wil-mot's) *Rhubarb*, are very fine. The others I do not cultivate.

"The only *good* grapes (and these are native ones,) which are *perfectly* hardy, are the *Limington White Grape* and *Buckminster's Cream Coloured*. Others may be cultivated to advantage in our state, with a protection of evergreens in winter.

"The *White Dutch Currant* is very productive, perfectly hardy, and of the best quality.

"The best strawberry is *Hovey's Seedling*, and it should be cultivated in alternate strips with *Early Virginia*, also good and earlier, but not so large. *Red* and *White Wood Strawberries* are good, though small, and do not need to be planted near others; none of them need any other protection than the winter's snow.

"*McIntyre's Seedling Peach* is one of the hardiest, though rather late in ripening. It originated in this county, as did also the *Limington Grape*.

"The following list of Gooseberries will give a succession of good fruit of different colours, viz: *Crown Bob, Whitesmith, Early Green Hairy, Red Champagne, Green Walnut, Roaring Lion, Heart of Oak, Jolly Printer, White Lion, Warrington, Golden Drop, B. Atlas*.

"The *Orange* and *Pear-shaped Quinces* are hardy, but, with me, are liable to a sort of fungus, similar to the *Black Knot* of Plums, but more fatal; it attacks both fruit and limbs. Is there any remedy for it?

"You will notice that I omit the *Bartlett Pear*, and do not place the *Green Gage Plum* in the highest rank, to say nothing of

lesser deviations from prevailing opinions elsewhere. I will give the reasons: Of the *Bartlett*, I have raised and purchased from various sources more than 500 trees; and of these, not one-tenth are alive, and very few promise to become profitable. Either the soil, climate, exposure or something else, does not suit them. In some cases, it seems to be a want of correspondence between the scion and stock. In one tree, of about 15 feet high, scions were inserted which grew finely several years; but one spring the trunk and roots were found to be entirely black and dead, though the scions still looked well, and some, which were cut, grew well in other stocks the same season. Another tree, of same size, partially grafted, soon became covered with blotches of canker, and lingered two or three years more. In some few instances it has done well. The true *Green Gage* is of slow growth, (unless grafted high,) tardy in bearing; then bearing light crops, is in perfection but a few days, and is very liable to crack. For quality, though none are better, it is equalled by the *Jefferson*, when both are in perfection. It is impossible to give a *very* small list of names which should be first rate in all cases, owing to the difference produced by soil, exposition, &c.; for instance, the *Williams' Favorite Apple* needs a strong, deep and rich soil to develop its true quality, while the *Bellflower* needs a warm light one; and so of others. Great advantage may be taken by suitably adapting different varieties to such soils as suit them; and there is here much yet to be ascertained by experiment and interchange of the results of cultivation. Respectfully yours.

S. L. GOODALE."

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The following lists are offered by Messrs. ELIJAH BECKWITH & ALBERT NOYES of Bangor, Me.:

"Of Apples. For the three best—*Williams' Favorite*, *Gravenstein*, and *Rhode-Island Greening*.

"For six, add—*Yellow Bough*, *Fameuse*, and *Danvers' Winter Sweet*.

"And for twelve, add—*Ribston Pippin*, *Baldwin*, *Golden Ball*, *Red Astrachan*, *Early Harvest*, and *Golden Sweeting*.

"Of Cherries. For the three best—*Black Heart*, *May Duke*, and *Kentish*.

"For six, add—*Black Eagle*, *Downton*, and *Downer's Late*.

"Of Pears. For the three best—*Dearborn's Seedling*, *McLaughlin*, and *Black Worcester*.

"For six, add—*Bartlett*, *Belle Lucrative*, [*Fondante d'Automne*,] and *Winter Nelis*.

"For twelve, add—*Louise Bonne de Jersey*, 2 *Vicar of Winkfield*, *Beurré d'Aremberg*, *Seckel*, and *Beurre Bosc*.

"Of Plums. For the three best—*Jefferson*, *McLaughlin*, and *Lombard*.

"For six, add—*Imperial Gage*, *Bleeker's Gage*, and *Washington*.

"For nine, add—*Purple Gage*, *Imperial Ottoman*, and *Green Gage*.

"Of Gooseberries, the following sorts:—*Crown Bob*, *Red Champagne*, *Yellow Champagne*, *Red Warrington*, *White Lion*, *White Smith*, and *Sulphur*."

MESSRS. BECKWITH & NOYES remark, "in selecting the Rhode-Island Greening Apple, Black Worcester Pear, Lombard Plum, and Kentish Cherry, in selections so small as those here made, their value for *uniform productiveness* and for *cooking*—indispensable qualities with us—have been considered."

The next response is from Col. L. CUTLER, of Dexter, Maine; dated January 10th, 1848; from which we quote as follows:—

"I know that it is a prevalent opinion, that our climate is unsuited to the raising of good fruit, particularly the pear. This

is a great mistake, although there are some kinds of pear and apple which require a warmer climate; there are enough, those among the very best known, which will flourish as well with us as in the world, and certainly plums. Currants and gooseberries will not do better anywhere.

"I do not mean, by the foregoing remarks, that of fruit, any kind can be raised in perfection without proper attention; the want of this care and the want of knowledge, or the dishonesty of nurserymen, I believe have been the cause of most of the failures which have been attributed to the cold climate. First, then, most men, when transplanting trees, instead of preparing deep and broad holes, well filled with good earth for these trees, dig a hole in the clay or gravel, (as the case may be,) just sufficient to crowd in the roots of the tree, and cover with the same material; thus, by their first act either killing the tree, or so injuring it that it never becomes a healthy and vigorous tree. The practice of nurserymen of engrafting upon bad and unhealthy stocks—the graft of the pear upon the quince, the thorn or wild pear instead of good stocks, and the palming off incorrect varieties for good ones—have been, and are now vexatious cause of failure and loss, even where great care has been taken in transplanting and cultivating the tree, and are practices which should be punished like any other swindling. If the evils above named could be obviated, I think we should hear little complaint against the climate, so far as raising fruit is concerned. I have never tried the quince; but my opinion is, that it does require a warmer latitude than ours to flourish. The Red and White Dutch Currants I raise; and I consider the common currant as unworthy of cultivation, compared with them.

"I have several varieties of gooseberry,

some of which approach so near to each other that it is difficult, perhaps, to say which is best. I have the following, all of which flourish well, viz: *Farrow's Roaring Lion*, *Keen's Seedling*, *Melling's Crown Bob*, *Miss Bold*, *Red Warrington*, *Early Sulphur*, *Yellow Champagne*, *Massey's Heart of Oak*, *Parkinson's Laurel*, *Woodward's Whitesmith*.

"When it is considered how easy it is to multiply gooseberries and currants to any desirable extent by cuttings, it seems strange that any one, with a small garden, should neglect their cultivation.

"I will answer your other inquiries according to my own notions, which may be very different from those of an experienced fruit grower. If I were restricted to three apple trees, I should take the following: *Rhode-Island Greening*, *Canada Reinette*, and *Ladies' Sweeting*.

"If to six, I would add—*The Ribston Pippin*, *Gravenstein*, and *Early Harvest*.

"To increase the number, I should add—*Red Astrachan*, *Williams' Favorite*, *Porter*, *Court of Wyck*, *Danver's Winter Sweet*, and the *Jonathan*.

"As to the Pears, I consider the *Bloodgood*, *Bartlett*, *Flemish Beauty*, *Seckel*, and *Passe Colmar*, as among the best pears; and, judging from the thrift of my trees, have no doubt they will stand our climate.

"Plums, for three trees—*Green Gage*, *Imperial Gage*, and *Jefferson*.

"For six, I would add—*The Washington*, *Yellow Egg*, and *Smith's Orleans*.

"In speaking of the foregoing trees, I can speak from my own experience so far as their growth is concerned; as I have them all, and all in a thrifty condition.

L. CUTLER."

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The following lists we extract from the reply of W. GOODALE, of S. Orrington, Me.:

"Apples. For the three best—*Sops of Wine*, *American Golden Russet*, *Ribston Pippin*.

"For six, add—*Porter*, *Gravenstein*, and *Queen's Pocket*, [for cooking.]

"And for twelve, add—*Williams' Favorite*, *Early Bough*, *Roxbury Russet*, *Maiden's Blush*, *R. I. Greening*, and *Garden Sweet*, (as known here; probably a local name.)"

This list he gives with confidence, as the result of twenty years with each variety.

"Regarding pears," he observes, "we have had about fifty kinds in bearing. Many of them proved too tender for our northern climate, while others prove quite hardy. All things considered, we find the following six varieties the most profitable for cultivation with us, viz: *Frederick of Wurtemberg*, *Chelmsford*, *Harvard*, *Belle Lucrative*, *Beurré de Ranz*, and *English Jargonelle*.

"All these produce good crops. The Vicar of Winkfield, which will no doubt prove quite hardy, has not fruited with me. I have, in my garden, fifty of the most noted kinds of plums; and, though with less confidence, I give you a list of the best of these, as well as some other fruits."

The following are the selections of the other fruits:

"Plums. For the three best—*Jefferson*, *Green Gage*, and *McLaughlin*.

"For six, add—*Washington*, *Imperial Gage*, and *Purple Gage*.

"For twelve, add—*Lombard*, *Bleecker's Gage*, *Smith's Orleans*, *Red Gage*, *Imperial Ottoman*, and *Magnum Bonum*, (for preserving.)

"Gooseberries. For the three best—*Crown Bob*, *Whitesmith*, and *Red Warrington*.

"For six, add—*Parkinson's Laurel*, *Red Champagne*, and *Yellow Champagne*.

"For twelve, add—*Green Walnut, Keen's Seedling, Cheshire Lass, Heart of Oak, Rifleman, and Wellington's Glory.*"

White and Red Dutch Currants, as well as gooseberries, as we learn from this gentleman, thrive and bear abundantly with him.

Gen. HERRICK, of Hampden, furnishes the following list of twelve apples, which he considers the best:

"*Early Harvest, Sops of Wine, (or Bell's Early,) Fameuse, Porter, Wine, Sweet Golden Russet, Sweet Bough, Honey Pink, (a local fruit,) Killam Hill, Baldwin, Nonesuch, and Swaar, or Mammoth Green Pippin. (Not, probably, the true Swaar.)*"

Gen. H. remarks that, as *market varieties*, he would substitute the *Porter* for the *Fameuse*, and the *Nonesuch* and *Swaar* for the *Early Harvest* and *Sops of Wine*. His attempt to cultivate the peach and quince, in the common culture of the open garden, have been entirely unsuccessful; the trees being too tender for the climate. He has tried sixteen varieties of grapes. All require protection, and none but the *Sweet Water* ripens fruit well; and the latter demands a good deal of care.

Isabella, Catawba and Schuylkill, (Alexander's,) require, usually, a longer season than that of his district, though they have borne high flavored fruit with him. They need to be covered in winter; and they make so large a quantity of wood in summer that it is too troublesome to lay them down and take them up again.* The Victoria Rhubarb is cultivated by this gentleman, and proves there, as everywhere, greatly superior to the common sort.

We have, next, from Hanover, N. H., a letter, written by a gentleman well known

in New-Hampshire for his devotion to horticulture. With the exception of some prefatory remarks, (in which he speaks of the apathy regarding the more refined kinds of cultivation always felt in a comparatively new country, and the very decided change for the better now so apparent in the granite state,) we must lay nearly the whole of this letter before our readers.

"For ten years past, I have travelled through various sections of the country, and have been a close observer of various matters and things pertaining to fruit growing and tree raising, and have collected nearly 1000 varieties of fruit, which have been propagated in a specimen orchard and the vicinity.

"Many of these varieties proving nearly worthless for our climate, it has led me, for five or six years past, to select the hardiest and most productive varieties, and to look up new choice native varieties for propagation, whose habits are congenial to a short summer and a severe winter. These operations have been a school to me, in which I have learnt many valuable things; but the tuition comes too high, leaving me minus, at least \$1000, for want of the proper information to start upon.

"And now, sir, if I can aid you, or any of your kindred spirits in your undertaking, or benefit the citizens of Bangor, and the community at large, I am willing to give the results of my experience. In Massachusetts, all that is necessary to ensure success in raising and maturing a crop of fruit trees, in almost any soil or location, is a liberal share of manure and good attendance. Here, it is not so. They may have both, and the sooner be destroyed by a bad winter.

"On my clayey ground, my Baldwins, R. I. Greenings, and other late young varieties, were killed close to the ground the

* This is easily overcome by giving the vines the annual pruning before laying them down. Autumnal pruning the vine is, on some accounts, preferable to spring or winter pruning. Ep.

second and third winters. This was occasioned by early frost, preceded by very warm weather, bursting the bark near the ground, and turning the sap of the tree brown. While the Shropshire, Summer Harvey, Red Astrachan, Blue and Sweet Pearmain, Latham, and some native varieties, with the Crabs, stood unmolested.

"On my alluvial soil, I have succeeded but little better with the Baldwin. *On the hill land* I have had but little trouble in raising nearly all the desirable varieties of the apple, pear, plum and cherry. But while my trees have been killed the worst in the valley, on my clay, and alluvial soil, and near the river; others engaged in the business, have succeeded the best on some low ground, near some large pond or lake, and that, too, sixty miles north of me. Nearly all our valleys and low grounds in New-Hampshire and Vermont, which are contiguous to streams, are more unfavorable for the raising of most kinds of fruit and fruit trees, than are the hills, while the banks of a lake or large pond prove favorable. Such as Champlain, Memphremagog, Winnipiseoge, and some large ponds. Will you or some one give me your views on what makes the difference? Were it the ocean, instead of ponds and lakes, we should readily say it was the humid atmosphere during winter. It has proved to be a great object here, to select our choicest native fruits for cultivation, still there are many varieties, from a more favored clime that are among our very best fruits, after being acclimated, and some before; such as the Early Harvest, Porter, Baldwin, Northern Spy, 20 ounce apple, Crier [?] Sweet, Gravenstein, &c., with some pears, and nearly all the varieties of plums.

"The first Baldwins I raised here were as green as grass, with not a tinge of red

on them till March. Now, they are *very* red, bear as well, are of a higher flavor, keep a month or two longer, and are decidedly a more valuable apple than in Massachusetts. The Northern Spy makes a strong growth, and comes through the winter well, and promises to make a most valuable variety for a northern climate.

"As to your question, 'were I restricted to three trees, what varieties would I select for my location?' I hardly know what to say to you. Had you said twenty-five, it would have been an easy task. But I will answer it as it is. Still, I am conscious that I shall not meet the views of every fruit grower.

"Apples. Three best—Shropshire, Shaker's Pippin, and Baldwin.

"For the six best—Early Harvest, Williams' Favorite, Porter, Shaker's Pippin, Jewet's Red, and Baldwin.

"For the twelve best—Early Harvest, E. Sweet Bough, Summer Harvey, Porter, Gravenstein, Jewet's Red, Dexter, Danver's W. Sweet, R. I. Greening, Baldwin, Real Nonesuch,* and Northern Spy.

"For the extreme north, or unfavorable locations, I would recommend the Red Astrachan, Shropshire, Summer Harvey, Taylor's Spice, Shakers' Pippin, Buel Sweet, Pound Sweet, Sweet Pearmain, Blue Pearmain, Morey's Melon Apple, Latham, Dexter, Punch Bowl, and Latham Pippin, (late keeping.)

"In selecting the number of varieties, I might add half as many more; between which and those named, there would be but little choice.

"In my selection, I have had reference mainly to their *superior value for extensive cultivation*, when considered in all their habits. They are all great bearers.

"As to 'how many sweet apple trees to

* This is the "Canada Red" of western New-York. ED.

a hundred set in an orchard,' I would have at least twenty-five; and were I to raise apples entirely for feeding out, as well as for domestic use, I would have two-thirds sweet, and for this reason: They are worth as much as potatoes for hogs, sheep, cattle and horses, and as easily raised; and as the potato crop is cut short by the rot, it makes it far more important that sweet apples should be estimated as a substitute. Let every permanent fence on the farm and road side be lined with productive sweet apple trees, and even then [until orchards are abundant,] it will be, as a friend of mine once said, who had 120 sweet apple trees of one variety. I said to him,—why do you have so many trees of a kind? 'They are my *Hog Sweetings*; and I set them on purpose to feed my hogs.' I said, —well, how do your hogs like them? 'Do not know; they have never got any of them yet, and I am afraid they never will.'

"Pears, I have not cultivated so extensively, having tried only about twenty varieties of a more southern clime; a part of which, together with a few choice northern varieties, I have cultivated with good success.

"Three best—Bloodgood, Udal, Doyenne, or Old St. Michael.

"Six best—Bloodgood, Udal's Seedling, Udal, Sweet Bell, St. Michael, and Winter Nelis.

"Twelve best—Bloodgood, Udal's Seedling, Dearborn's Seedling, Sweet Bell, Bufum, St. Michael, Louise Bonne de Jersey, Fulton, Vicar of Winkfield, Prince's St. Germain, and Winter Nelis.

"Plums. I have cultivated over fifty varieties of the plum, mostly on the wild or Canada plum stock, which makes the hardiest and most productive tree for this climate; and when grafted or budded close to the ground, grows large and handsome.

Most varieties of the plum have succeeded perfectly well here, and large crops were raised the past season. Three best—Early Orleans, Prince's Imperial Gage, and Purple Gage.

"Six best—Early Orleans, Duane's Purple, Blue Dwarf Gage, Green Gage, Lombard, and Black Damson.

"Twelve best—Royal Native, Duane's Purple, Washington, Smith's Orleans, Blue Dwarf Gage, Imperial Gage, Green Gage, Purple Gage, Columbia, Jefferson, Orange, Lombard, and Black Damson.

"Cherries. The Kentish or Pie Cherry, (called here the Tame, in distinction to the wild cherry,) is the main cherry in this region, and by far the most hardy and productive; it produces the same from seed, and is nearly as good for us as any of the Heart, Bigarreau, or Duke Cherries, that can be raised here. I have tried some dozen varieties, and find the Black Heart, Black Tartarian, Hyde's Native, Downer's Late, May Duke, &c., succeed tolerably well. Still, we do not get a crop of fruit oftener than once in three or four years. The others make a rapid growth, and set full for fruit; but the buds are spoiled by the severity of the winter, or a late frost in the spring.

"Gooseberries and currants, I have not, as yet, cultivated extensively; but they are all perfectly hardy. I have some of the Red, Green and White English Gooseberries, and a few valuable varieties selected from our swamps.

"I have the large Red and White Dutch, and the Black Currants.

"The White Dutch succeeds well, and in some respects is preferable to the Red.

"Grapes are raised in this region, in favorable locations, with open culture. The Isabella, and White Sweet Water, have been as much cultivated as any varieties,

but they are too late for our short summers; and much has been done of late to raise and seek out new native varieties, that are earlier and hardier, and that will stand the severity of our climate, unprotected. Many valuable varieties are already produced. I have, as yet, cultivated but few of them; but am now making a selection.

"The varieties of Rhubarb you mention, I have not, as yet, cultivated.

"Strawberries, I have cultivated but little. Still, any desirable variety will flourish well here.

"I have given you my selections, and could give you a reason for all my preferences, but it would occupy too much time. I am well aware that I have already trespassed on your patience; and the only apology I have to make, is the deep interest I ever take in this subject, I am respectfully yours.

JOSEPH PINNEO."

Hanover, N. H., Jan. 28, 1848.

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We will observe, in conclusion, that our northern readers owe Col. LITTLE many thanks for the interesting information which he has elicited from the most experienced cultivators of our coldest states. Notwithstanding the apparent difficulties in the way of the fruit grower in that portion of the Union, it is evident that orchards, of the finest hardy fruits, will soon cover the hill sides there. A great deal of disappointment will be avoided, in the future,

by novices in the culture of the garden, by a comparison of the different lists given, from which they will see directly the sorts which experience has proved, and which experience only can prove, to be best suited to the climate.

It is quite a remarkable fact, which we have gathered from previous conversations with Col. LITTLE, and other Maine horticulturists, that, while many fruits which attain great perfection here, fail entirely there; others, of English origin, which fall far below their foreign reputation with us, fully maintain it in the state of Maine. As illustrations, we may mention the *Ribston Pippin Apple*, only second rate (all points considered,) in the middle states, yet, which reaches the highest perfection on the Penobscot river; and has all those qualities of high flavor, crispness, and good keeping, which render it so popular in Great Britain. *Gooseberries*, too, of the finest Lancashire varieties, the culture of which is often so unsatisfactory here, grow to enormous size, and attain the highest flavor, without mildew, and with the least possible care, about Bangor.

We observe, among the most popular fruits, two excellent native varieties which originated in Maine,—the McLaughlin Plum and the McLaughlin Pear. Both these kinds we know very well; and they are truly excellent fruits, worthy of general cultivation.

TRANSPLANTING EVERGREENS.

BY LEVI BARTLETT, WARNER, N. H.

IN the September number of your Horticulturist, is an article on "Transplanting Evergreens," by one of your correspondents. From some little experience in transplanting, I am led to believe, with the writer, that the spring is the best time to trans-

plant evergreens, *under proper conditions*, in connexion with Sir HENRY STEWART's advice, of "choosing trees that stood naturally in an *exposed or open site*," when evergreens are to be taken from the woods.

The conditions I allude to are, first, to have the holes dug sufficiently large, and the excavated soil from the holes well pulverized, and nicely piled by the sides of them; secondly, after the frost is out of the ground, whether March or April, (February for further south,) choose a day for taking up the trees which will be succeeded by a *cold freezing night*; commence by cutting with a sharp spade a suitable distance from the trees, so as to lift them with a ball of soil attached to the roots, proportioned to the size of the trees; after, leave them through the night, the trees *lying* upon the ground, so as to expose the ball of earth to the action of the frost. Early next day, with wagon or other suitable conveyance, lift the trees, and transport before the frozen earth thaws. Throw in the holes sufficient of the excavated soil to bring the trees to the right depth; after the trees are placed, fill up with the soil, and dash on a few buckets of water to fill up all interstices about the roots; and, believe me, the trees will scarcely at all feel the removal, and will grow nearly as well as if they had remained in their native localities. I ought to add,—provided you do not remove with the knife, or saw, too many of their “neither limbs;” as severe pruning of this kind is pretty certain death to *evergreens*.

You will perceive this method possesses many advantages over that of cutting, or digging up trees in the coldest winter months, when the ground is frozen as hard as a rock.

Last spring, several persons in the village near where I reside, at much expense of time and labor, transplanted from their

native localities a large number of beautiful Fir trees into their door yards, and about their grounds; some of them sixteen feet high. I saw the trees as they were brought into the village on wagons. Many of the large roots were cut off to the length of eighteen inches from the base of the trees; and all the roots were as bare of soil as the limbs were. I remarked to the persons engaged in transplanting the trees, that they were laboring in vain; and, instead of planting them in their grounds, they had better throw them on the brush heap. They thought otherwise. Their door yards presented a fine appearance till about mid-summer, when a sad change came over the symmetrical Firs. Every tree, except one, died before autumn. These men will never again be caught transplanting evergreen trees, until they can obtain more correct notions about the art.

Last spring I transplanted quite a number of Hemlock, Spruce, Fir, Larch, White and Norway Pines, from six to ten feet high. They were all taken up with a ball of earth about the roots, but not frozen. They have flourished the past summer *exactly in proportion to the quantity of soil attached to the roots*. The Norway Pines, about a dozen in number, grew on a drier and more gravelly soil than the others; and by the jolting of the wagon, most of the soil dropped from their roots, and only two of the number lived through the summer. Had I taken the course recommended in this paper, I have no doubt every tree would have lived. Yours, &c.

LEVI BARTLETT.

Warner, N. H., January 26, 1848.

Fig. 53.—*Araucaria imbricata*.

THE ARAUCARIA OR CHILI PINE.

[We quote the following notice of the striking new evergreen tree, so much the rage at present in England, (see vol. 1, page 541,) from the *London Horticultural Magazine*. From the experience of the last two seasons, there is every reason to believe that this tree will prove hardy in the latitude of New-York. Ed.]

ARAUCARIA, (*Jussieu*.) is derived from *Araucos*, a name applied to the natives in those districts of Chili where the tree is indigenous.

Araucaria imbricata, Pavon (imbricate-leaved *Araucaria*, or Chili Pine).—Leaves generally eight together, ovate lance-shaped, thickened at the base, stiff, straight, with persistent mucros. Cones globular at the end of the branches, about the size of a man's head; scales beautifully imbricated.

A very remarkable evergreen tree, of magnificent dimensions, almost the only one to be met with in those districts where it is indigenous. It is a high tree, from 80

to 100 feet, with a trunk like a pillar. Standing closely together in the forest, the trees are generally devoid of branches to the height of fifty or sixty feet: the top is in the shape of a depressed cone, the side-branches proceeding from the trunk in a horizontal direction, and ascending slightly at the tips. Over those branches the leaves are thickly set like scales, which give an appearance of rich embossed work. From the thick coating of leaves which pervades the whole outline of the tree, an idea of extreme brittleness is conveyed to the mind. The wood, however, was successfully used in ship-building in 1780 by Don Francisco Dendariarena.

This plant is a native of the mountainous parts of Chili, in South America, particularly in that division occupied by the tribes of original inhabitants called *Araucos*, from whom the tree derives its name; and from the fact that the climate where it thrives has accommodated itself so wonderfully to European productions, a hope may be held out that the *Araucaria* may in this country

prove a valuable acquisition to the arboriculturist. The largest forests of this tree are on the elevated parts of Naguelbuta and Caramavida, which Pavon describes as "offering to the view, in general, a rocky soil, though in parts it is wet and boggy, on account of the abundance of rain and snow which falls in these regions, similar to many provinces in Spain." Peppig, a traveller in the Peruvian Andes, states, that "the Araucaria forest of Antuco is the most northerly that is known in Chili; so that the northern boundary of this king of all the extra-tropical American trees may be estimated at thirty-six degrees south latitude. The extreme southern limit is not so clearly ascertained; which is not surprising, when we consider how little, comparatively, is known of Western Patagonia: it seems probable, however, that it does not stretch far beyond latitude forty-six degrees. Between Antuco and Valdivia this tree only grows among the Andes, and, as the Indians assert, solely on their western declivities, and nowhere lower than from 1500 feet to 2000 feet below the snow line, up to which they frequently reach. Farther to the south, the Araucaria appears at a lower elevation; and in the country of the Cuncos, and about Osorno, is said to occur on mountains of a very moderate altitude, near the sea. The Corcovado, a mountain that rises opposite Chiloe, is said to be studded, from its foot to the snow line, with large groups of these beautiful trees.

The wood, as grown in the Andes, is of a yellowish white colour, veiny, and of close

texture; and is said to have been used in ship-building. The tree produces a whitish resin, used extensively by the natives in the cure of wounds and contusions. The fruit may be said to form the regular harvest of several of the original tribes, and it is eaten by them in a raw state, and after being boiled and roasted.

The tree is particularly ornamental, and no plant can be used with greater effect in distinguishing particular spots of country appropriated to art. It should be on every gentleman's lawn: it is both elegant and unique; and if sheltered during frosty weather, so as to keep off that rustiness of colour which a free exposure to the seasons brings with it, it will well repay the trouble in spring time.

With regard to what is the best mode of propagating this tree, there is but one opinion—raising from seeds. Bottom heat is invariably recommended; and the seeds should be inserted to the depth of about an inch and a quarter, in large boxes or pans filled with free loamy soil, which should on no account be allowed to get dry. When two years old, they should be transplanted into nursery lines, in a warm sheltered situation in the open ground, carefully guarding them from excess of moisture, and, in frosty weather, from excess of cold. Those raised in hot-houses, green-houses, &c., certainly look better; but when planted in their final situation, in exposed places, the former soon take the lead. Planted by the sea side in Norfolk, they have made shoots about a foot in length in one season.

THE VINEYARDS OF THE OHIO.

BY A. H. ERNST, CINCINNATI.

IN writing upon the *Vine*, it is impossible to forget the many associations of antiquity which are inseparably connected with it. In sacred history, these are especially interesting. In all time, has the vine, and the enjoyment of its fruit, been regarded as a blessing especially adapted to the health, comfort and luxury of man. "And Judah and

Israel dwelt safely, every man under his own vine and under his own fig tree."

The vine seems to have been given to man in a more perfect state than most other fruits; for though many of the fine varieties are the result of patient cultivation, the finest wild grapes of either Syria or America are truly delicious, when compared with

wild crabs or wild peaches. Its culture and enjoyment, in the earliest ages of the world, were considered synonymous with the prosperity and happiness of man: "and they shall build houses and inhabit them, and they shall plant *vineyards* and eat the fruit of them."

Though the world has grown old, the paternal love of vineyards has not in the least diminished in the heart of man. We are just as busy, at least in this part of the new world, with planting vineyards as were Noah and his immediate descendants; and I may, therefore, I trust, be pardoned for giving some detail of the early history of this branch of agriculture in the valley of the Ohio.

If we take a retrospective glance of fifty or sixty years—a period the scenes of which are perfectly within the recollection of some yet on the active stage of life—when the unexplored wilds of the Ohio—the now *indeed* beautiful Ohio—were penetrated by a few hardy adventurers, seeking to better their condition, with but little to cheer them in their dreary course, but encountering, at every step, the shrieks of wild beasts, and their but little less ferocious companion, the Red Man, we shall have some data from which to start. The great abundance of the wild grape, found indigenous in the forest, and the luxuriance of their growth, towering and spreading over the tops of the tallest trees, abundantly loaded with fruit, justifies the idea that the better and finer sorts would flourish here also. How or from whence these were to be obtained, or what sorts would prove adapted to the soil and climate, would remain a matter of slow inquiry and experiment. This must, of necessity, mainly depend on emigrants, in after time, from vine-growing districts, without a knowledge of the soil and climate, bringing with them old and valued sorts, and

applying their old and accustomed modes of cultivation. These emigrants brought with them a strong natural prejudice against native sorts, and a different mode of treatment. Before success could attend them, old prejudices and predilections must be abandoned, and a new practice, and native sorts sought to occupy the place of old friends unsuited to their new locations. These were hard struggles, which required time to bring to a successful issue.

Early attention was drawn to the subject, and efforts were attended with more or less success. None of these were, however, of much importance, until about the year 1796 or 7, when JOHN JAMES DUFOUR, a zealous Swiss, came to Lexington, Ky. Having previously looked up all the vine cultivators east and west, the smallest of them not escaping his notice. He succeeded in forming a joint stock company, for the purpose of extensive operations. The first difficulty presenting itself, was a want of plants. These were at much cost, collected partly about Philadelphia, New-York and Baltimore, with some he had brought from Switzerland, to the amount in all, of thirty-five sorts, *all foreign varieties*. Most of these were brought to fruiting, and some specimens of wine were produced. "This was drank by the stock-holders," I presume with much satisfaction. Unfortunately, however, these vines soon after perished with the mildew and other diseases to which the European sorts were found subject, except a few stocks of two sorts, the Madeira and Cape. This was so discouraging, that after a few years efforts to increase the stock of these, the former, in the mean time, sharing the fate of the rest, the project was abandoned, and the little band dispersed. Afterwards joining themselves to a small colony of their countrymen, who had commenced a settlement on the banks of the

Ohio, in the then territory of Indiana, some fifty miles below Cincinnati, where they had commenced the cultivation of the vine in 1802. This location was afterwards named Switzerland, and the town Vevay, in honor of their fatherland. Here, uniting their force, and adding their dear-bought experience, they commenced vigorous and successful operations with the Cape grape, [Alexander's or Schuylkill Muscadell.] As there is some doubt and dispute about the origin of this grape, I will here add DUBOUR'S account of it. He says he procured it of one LEGOUX, residing at Spring Mill, near Philadelphia, who informed him that he imported it from the Cape of Good Hope. There, he supposes, it must have been carried by the Dutch settlers, and thinks it hence a European grape.* Be this, however, as it may, importance must always attach itself to it as the foundation of a successful effort to cultivate the grape in the valley of the Ohio, for the *manufacture of wine*. Time will show whether for good or evil, to the morals of our people.

Here these indefatigable strangers persevered in their efforts, and produced, for many years, a dark red wine, too harsh and astringent, however, to receive general favor, which confined its use mostly to the German and French population. Its harshness was probably owing to the age at which most of the cultivators found themselves obliged to sell their product. Bottled samples of it have been kept until it had attained an age of some years, which were pronounced, by good judges, to resemble and equal fine Burgundy, showing what it is capable of making, with care and age. The average yield, per acre, in their early operations, was 180 gallons, and the market price \$2. This price, however, was greatly reduced by importation of French

wines, so that they have been driven out of the market, and their operations abandoned. The fruit of their vineyards not possessing the rich and pleasant flavor to recommend it to public favor for the table.

Experience conclusively showed that it is the native sorts on which reliance must be placed; as the foreign sorts, with no exceptions, (unless the Cape be such,) have proved a failure, and disappointed all expectations. Although the culture of the vine was yet in its infancy, sufficient had been done to prove beyond dispute, that the soil and climate of this valley are well adapted to the grape; and all that was necessary to complete success, was some suitable native sort. This had not been lost sight of, while the suspension at Vevay tended to develop and to make room for a more varied and diffused system of cultivation, with different and better sorts. Of these, the CATAWBA has taken and maintained the lead. So successful and profitable has its culture proved, that I shall not be above the truth to set down the number of *acres* now covered with it in this vicinity, at *four hundred*. Of course it will be understood that only a part of these have come into fruiting. With all this quantity under cultivation, such is the desire for wine-making and its profits, that few markets where there is any pretension to cultivate the vine, are more deficient in the supply of the fruit than ours, at the high price of three to five dollars per bushel. The reasons assigned for this, are, that the bushel of good fruit will yield, on an average, four gallons of wine, and this readily commands from one to one dollar fifty cents per gallon from the press. It should be borne in mind, that the extension of the Ohio vineyards, thus far, has been limited only by the supply of plants. From this, (as the plants are now multiplied with great facility and at low prices,) should their product

* It is unquestionably an American grape.—ED.

continue to meet a demand, its future extension may be inferred. However, I promised to confine my remarks to its infantile struggles into existence. My purpose in this article is answered, in having shown that every man may indeed set under his own vine, (if not his fig tree,) in our highly fa-

vored valley, and enjoy the luxury not only of its shade, but the greater one of an abundance of fine rich fruit, with none to molest or make him afraid.

Very respectfully,

A. H. ERNST.

Spring Garden, Cincinnati, Feb. 1, 1848.

THE BEST SOIL FOR PEAR SEEDLINGS.

BY H. P. BYRAM, LOUISVILLE, KY.

DEAR SIR:—I have read the communications in the December and January numbers of the *Horticulturist*, "On raising Pear Stocks," with much interest. The disease described by Mr. JAMES WILSON, of Albany, appears to prevail in most parts of our country, and the cause seems to be as mysterious as that of the "*Potatoe rot*." I observed it extensively in various parts of the Union, in the years of 1845 and 6. How long it has prevailed I know not; or whether the same locations where it once appears are ever after entirely exempt, I am not informed.

With the hope of throwing some light on the subject, I will give you the result of my observations for the last two years.

In the spring of 1846, I planted several quarts of pear seeds in my nursery, at Brandenburg, Ky., in a dry, loamy soil, of but moderate fertility. The trees were well cultivated until the 23d of June, (when I left home for the season,) after which they received but little attention. At this period the plants were from 6 to 24 inches high. At the end of the season they measured from 1 to 6 feet high.

Last spring I repeated the experiment in the same nursery, upon similar soil; but owing to incessant rains, (the seeds having vegetated in the sand,) I was compelled to have them planted before the ground was in a suitable condition to work. Hence

but a small portion of them came up. The early part of the season was extremely dry, the trees, however, proved equally healthy with the former crop, though not receiving as thorough cultivation, they are but about half the size. At the same time I planted several quarts of seed in our nursery near this city, upon level land, naturally good, though somewhat worn. Texture, deep sandy loam. These, under my own observation, received extraordinary cultivation. The season here being much more favorable, as to showers, than at Brandenburg. Notwithstanding, in August they were attacked, in spots, by the blight, as described by Mr. Wilson, and ultimately, the entire lot was wholly denuded of foliage. Our pear grafts also suffered in like manner, while those in Brandenburg, the first season, made a growth of from 3 to 7 feet high. My apple grafts, in that location, also far exceed in luxuriance, any that I have seen in other soils, presenting a clean, smooth stem, and healthy foliage, by which the varieties, either in summer or winter, are more distinctly marked than is common in other grounds.

Now, sir, premising that you have pointed out the cause and remedy for the disease alluded to in your article on "*The Philosophy of Manuring Orchards*," in your January, where you say, "In this state of things,

the baffled practical man, very properly attributes it to *some inherent defect in the soil*, and looks to the *Chemist* for aid," I herewith send you the analysis of the *virgin* soil of the Brandenburg Nursery. That upon which the stocks and grafts grew, has been in cultivation, perhaps twenty years, and lately with the application of good dressings of stable manure and ashes.

ANALYSIS BY CHAS. WHITTLESEY.

"Color, dark yellow—no gravel, easily pulverized, all passes the sieve.

Carbonate of lime,.....3.10

Oxide of iron,4.21

Vegetable matter,*.....3.53

Water, (not expelled,) ... 2.13

Sand and Clay,..... 86.50

Loss,..... 43

100.00"

Is it not possible that in growing pear seedlings as thickly as is the custom, that some important element of the soil is exhausted before the close of the season?

Very respectfully yours, &c.,

H. P. BYRAM.

[REMARKS.—This is a valuable statement. The analysis of the soil, in Mr. BYRAM's Brandenburg grounds, shows at a glance, why the pear and apple succeed so well there. It contains a large proportion of *lime*, and a large proportion of *oxide of iron*. He is also in the habit of using *ashes* as manure.

The *lime* is most essential to the growth of the apple and pear tree, and if our views are correct, (see vol. 1, p. 318,) iron is also essential to give health to the foliage. To the presence of the latter, in the Brandenburg soil, we are inclined to attribute the absence of the leaf blight, so troublesome at Louisville and many other parts of the country.

Wood Ashes, leached, is probably safest; is certainly one of the very best manures for the pear tree, as it contains both lime and phosphate. To prevent the *leaf blight*, in raising seedlings, we again repeat our recommendation to water with weak copperas-water, or to mix the cinders of the blacksmith-shop with the soil of the seed-bed—say at the rate of a bushel of cinders to a bed ten feet by four.—ED.]

ARE THE OLD PEARS EXTINCT?

BY J. J. THOMAS, MACEDON, N. Y.

[SOME of our Boston friends are still unwilling to abandon the idea, that many of the finest old varieties of fruits have *run out*, and are no longer worthy of cultivation. Thus we find, in the first number of the Transactions of the Massachusetts Horticultural Society, Gen. Dearborn speaks of them in the following terms, in his learned article on the pear:

"From some inexplicable cause, the St. Germain, St. Michael, (Doyenné or Virga-

lieu,) Brown Beurré, Messire Jean, and several others of the best old varieties of pears, have either disappeared, or are so deteriorated as to be no longer worthy of cultivation. This lamentable decadence, however, is not confined to this country, but is experienced in France, the probable birth-place of most of the pears, bearing the highest reputation, formerly known in the gardens and orchards of both England and the United States."

* In procuring this specimen of soil, I mingled a portion from *near* the subsoil, which leaves in the analysis a smaller portion of vegetable matter than would be found otherwise.

It would appear from the above, that it is taken for granted that such pears as the

St. Michael (*White Doyenné* or *Virgalieu*), are considered, in their decadence, no longer of any value to the cultivator. We have, for sometime, endeavored to combat this opinion, since we are familiar with abundant examples to the contrary. We have just received a letter from Mr. THOMAS, so well known as a horticultural writer, from which we take the liberty of presenting some further evidence on this subject.]

I furnish, for the Horticulturist, a few facts, relative to the condition of the WHITE DOYENNE or Virgalieu pear, in western New-York. Having been familiar with this pear for more than twenty-five years, and with its uniform excellence, health and productiveness, I had never taken the trouble to remember any particular facts upon the subject; supposing that, however worthless it might prove in some localities, its vigor and fruitfulness in most places would never be questioned. I have, therefore, been compelled to apply to some of my friends for additional facts of a tangible nature, to demonstrate what I had before taken for granted.

So far as my own experience extends, I may state that, during many years past, this pear has generally been regarded as *incomparably the best*, for all qualities taken together, throughout central and western New-York. During my business of raising trees for dissemination, I have had more inquiries for this variety than for all others put together. Many of the most enterprising cultivators are planting large orchards, when they can obtain them from the nurseries, which are inadequate to supply the increasing demands. The old bearing trees with which I have been familiar, have regularly produced several bushels annually, and I have never seen a single specimen that did not possess the fine rich flavor, and

delicious melting qualities, so conspicuous in this excellent variety.

A few particular instances, taken very much at random, may serve to exhibit definitely the productiveness of the tree. P. BARRY, of Rochester, informs me, on the authority of H. N. LANGWORTHY, that a tree, measuring about eight inches in diameter, produced annually *five to seven* bushels of fruit, which sold for \$2.50 to \$3 per bushel. He also states that H. COLBY, near that city, has a tree upwards of twenty years old, which produces annually (not under the most favorable circumstances,) two to three barrels of fruit, which he usually sells for about \$8 per barrel.

OLIVER PHELPS, of Canandaigua, states that a tree upon his grounds, which was budded twenty years ago, has for the last six or eight years borne from *four to seven* bushels of uniformly fair and good sized fruit. CHARLES SEYMOUR, of the same village, informs that he has four bearing trees, one of them forty years old, the others twenty-five and fifteen years old; and that, although he is not in the practice of *measuring* the crop, "they are uniformly heavily loaded with fruit, and seldom fail to be large and perfectly fair." RALPH CHAPIN, also of that village, has a tree, at least twenty-five years old, in good bearing condition, which, for the last eight years, has borne from *three to seven* bushels annually. A tree, belonging to one of my near neighbors, usually produces several bushels yearly; the heaviest crop it has borne being *eleven bushels*. I have given these instances just as they came to hand, without selecting the most remarkable merely; and I could easily increase the number ten fold. Of some of the finest trees which I noticed the past season, I have had no opportunity of ascertaining the products. In most instances, the trees have grown in soil of

medium fertility, and with little or no cultivation. It is scarcely necessary to add, that the highly respectable individuals who have kindly furnished me statements, are most of them thoroughly conversant with our finest varieties, and that there cannot be any doubt that the trees they possess are the veritable WHITE DOYENNE, almost universally known in western New-York as the "Virgalieu." Nearly all agree in the opinion, that it is remarkably free from attacks of the blight.

The lowest price I have heard of, is \$1.50 per bushel upon the tree. Ten dollars per barrel in New-York city, has been common for some years past. Judge Phelps writes, in addition to the facts already quoted,—“I have been credibly informed by persons dealing in them, that they have sold in Albany and New-York from \$10 to \$12 per barrel, of two and a half bushels. I saw them sold in October, 1843, in Fulton market, New-York, by the peck, at the rate of \$6 per bushel.” P. Barry also states,—“The pedlers of our city collect them from every part of the country within fifty or sixty miles, ripen them gradually in their houses, and sell them during October and November at two to six cents each.” A. THORP, of Syracuse, informs me that at that place, where this pear flourishes admirably, the usual price is \$3 per bushel.

In answer to an inquiry, DAVID THOMAS of Aurora, Cayuga county, writes,—“My trees of this variety are among the most hardy and productive. EDWIN B. MORGAN told me yesterday that his had done finely, while all his other pear trees had been injured by blight. Several gentlemen with whom I conversed, laughed scornfully at the idea, that any one should think the Virgalieu was not one of the very best, most productive, and most hardy varieties; it was so very ridiculous! From

three trees, at C. C. YOUNG'S, (at Aurora,) \$39 were obtained from their fruit in the autumn of 1846.” J. J. THOMAS.

Macedon, 2d mo., 12, 1848.

.....

We may add to the foregoing evidences of the productiveness and value of this finest of old pears, the following: We know very well a large fruit grower and fruit dealer in western New-York, who sent to the New-York market in the past two seasons nearly *two thousand dollars* worth of this variety of fruit,—so beautiful and fair as to command the very highest price.

Instances of the great productiveness of the *Doyenné* are quite common in this state. We received very fine specimens of this pear last autumn, from J. C. HASTINGS, Esq., of Clinton, N. Y., with the following statement:—“This fruit was raised by my father, Dr. SETH HASTINGS, of this place. I give you the following account of the tree which grew it. He sold five and a half barrels from the tree this season, and had from one and a half bushels to three pecks that fell from the tree, and were bruised, rendering them unfit to pick and send off. The five and a half barrels were sold for \$9 per barrel at home; and, with what fell from the tree, *he estimated the whole produce of the tree at over \$50.* You can depend on this statement as correct in every particular; and I think it would be difficult to find many pear trees more productive.”

With this kind of evidence, (and the same is true of the *Brown Beurre* and other old pears,) that, as Mr. THOMAS says truly, may be multiplied in western New-York ten fold, we think it can no longer be said, with any show of correctness, that these fruits are “run out;” that they are in their decadence; that they are unworthy of cultivation.

What, then, is the explanation of the ab-

solute failure of such fine old pears as the Doyenné?—for we grant it is an absolute failure, in many of the long settled parts of the country, and more especially in high sandy soils. What is the secret of the great productiveness, great beauty, and high flavor of this pear in some districts of the country—as in western New-York?

Our answer, a few years ago, to the first question, was defective *soil* and *climate*. Our views are now, with more observation, modified; and we think the difficulty lies almost wholly in the *soil*. In all those places where the Doyenné and other old pears once succeeded, they will succeed again, if the necessary elements, which have been exhausted, are again restored to the soil. These elements are chiefly lime and potash; (perhaps a little iron—say in the form of blacksmith's cinders.) Theory—the analy-

sis of the ashes of the tree proves this; experience, by direct experiment, (see articles on "Renovating Outcasts," in previous pages,) has also demonstrated its truth.

Western and central New-York—what is known especially as the great wheat growing district—are remarkable for their *limestone soils*. It is there, the apple and the pear thrive so admirably; it is there that the "old and degenerate varieties" have all the bloom, freshness and lusciousness of their pristine days.

Will, therefore, our friends, more familiar with old, light and long cultivated soils, instead of heaping the sins of old age on the devoted heads of the "outcasts," give them plentiful dressings of lime and ashes, and bring them back to the paths of fruitfulness and honor? ED.

SPECIAL MANURES FOR FRUIT TREES.

WE find an interest in *special manures* for fruit trees, springing up in all parts of the country. The following extract from a letter received lately, is only one from among many of similar character, which have come to us, all asking for more detailed instruction:

Washington City, Jan. 22d, 1848.

DEAR SIR:—The information contained in the leading article of your *HORTICULTURIST* for this month, (January) is worth ten years subscription to that work, to any person that has an apple orchard. Since reading it, I have, for my own satisfaction, made inquiries with regard to apple trees, of sundry gentlemen residing in the western country, all of whom agree in remarking that *apples are invariably the best and most abundant in limestone portions* of that country. Can you not, sir, in your next number, (or

at farthest, in the March number, give to new beginners, like myself, some inkling as to the *quantity* of the requisite materials to be applied to apple and pear trees, and to grape vines.

Two and a half years ago I purchased some land, one and a quarter miles from, and in full view of the capitol of the United States. There was upon it, when I purchased, a small orchard of peach and apple trees. The soil is, I think, sufficiently rich. The peach trees, now ten years old, are thrifty, and bear large quantities of fair and fine flavored fruit. The apple trees bear scarcely at all, and the fruit they produce is small and worthless. The trees grow very well.

Very respectfully and truly yours,

DAN. GOLD.

A. J. DOWNING, Esq.

For old apple orchards, upon soil deficient in lime, we would recommend a top-dressing of lime—for the first time—of 200 bushels to the acre. This will, usually, if the land is in good condition, bring the trees into good bearing condition again. In some soils, the effects will be immediate, and in others it will require one or two seasons for the lime to produce its effect.*

For middle sized bearing trees, a *peck* of air-slaked lime to each tree, is sufficient. It is, perhaps, best applied in the autumn, but it will answer very well in the spring. Scatter it evenly over the surface of the ground, as far as the roots extend. It may be ploughed or hoed under slightly, or left upon the surface, as it will find its way downwards in the soil.

To keep an apple orchard in the *fruit-bearing condition*, in a soil not calcareous, and not naturally congenial to the tree, it should be dressed with lime, and with ashes, every alternate autumn, and manured every other spring. The same quantity of spent ashes as of lime, may be used for each tree.

For the pear tree, we prefer the following compost. Take a wagon load of peat, or black, swamp earth—dissolve 20 lbs. of potash in water, and water the peat thoroughly with the liquid. Let it lie a couple of days, and it is fit for use. Or, for the same quantity of peat, use one-third of a load of leached wood ashes, (or ten bushels of fresh ashes,) mixing the whole, and letting it lie a fortnight before using it. Give each middle sized bearing pear tree, a *bushel* of this compost annually; a newly planted young tree, half a peck, and others in this proportion. If this compost is applied in the spring, the trees may also have a top-dressing of *bone dust*, if easily obtained, in the

autumn, at the rate of half a peck to a tree.*

The same compost, and the same quantities, will answer admirably for the grape vine. But as the grape is a strong-feeder, and likes more lime than the pear, we would give it, besides an autumnal coat of lime, at the rate of from 50 to 100 bushels to the acre, applied along with any manure or compost most easily obtained.

For the plum tree, in light soils, (there is little or no difficulty in growing it in clay soils,) we would recommend a compost, made as follows: To two wagon loads of strong loam, or yellow clay, add a bushel of cheap salt and four bushels of lime. Mix the whole thoroughly; suffering it to lie at least a fortnight. Apply this as a *top layer* or *top dressing* to the soil directly under plum trees, (spreading it over the surface as far as the branches extend,) at the rate of *two bushels* to a middle sized bearing tree, or half a peck to a young, newly planted tree.

As a general compost for fruit trees, we repeat, that nothing is equal to that formed of *ashes and peat*; [for directions, see page 384.] These materials are easily obtained in all parts of the country, and they contain the elements most essential in the organic and inorganic structure of fruit trees. Where peat is not at hand, use wood ashes alone, at the rate of half a bushel of leached ashes to each middle sized bearing fruit tree. But as ashes furnish only the mineral or inorganic elements of food, the usual supply of ordinary manure must not be withheld, unless the soil is already sufficiently rich.

* All fruit trees are much benefitted by *phosphate of lime* (i. e. bone dust;) but the pear especially. Where bone dust cannot be had, bones themselves may be dug in about the roots, and allowed to decompose gradually. Four fifths of all the bones from the kitchen are thrown away, in the country. If these were saved, and put at the bottom of the holes, when planting pear trees, they would furnish a most enduring supply of *phosphate* to the roots.

* Oyster-shell lime is the very best—some others contain too much magnesia—but, perhaps, only a few.

Our readers will not consider these hints as scientific formulas for manuring these several fruit trees. They are only rough recipes for most easily making composts, to supply the elements which science has demonstrated to be most essential to the growth, health and productiveness of some of our leading fruits. We give them, to enable those who, like our correspondent, are beginners, to feed their orchards and fruit gardens with appropriate food, without the danger of destroying their trees. To

give positive directions for *special manures*, it would be necessary to have an analysis of each particular tree, as well as each particular soil, on which it is to be grown. But since we now know what their general organization requires, we can furnish to soils naturally deficient the wanting elements. The trees themselves,—this being done, will speedily take up the necessary food and assimilate it; giving us back a reward in healthy growth, and abundant and excellent crops.

REVIEW.

THE FLOWERS PERSONIFIED—*being a translation of "Les Fleurs Animées;"* by N. CLEVELAND, Esq. Illustrated with steel engravings, beautifully coloured. (Nos. 1 to 14, 8vo. Price 25 cents each.) New-York: published by R. Martin, 170 Broadway. 1847.

HERE is one of the prettiest fancies, most charmingly carried out, that ever entered the imagination of a writer of tasteful and entertaining books.

The ancients have long ago told us, that on certain great occasions, mortals were changed by the gods into flowers; but it has been reserved for one of the most brilliant and witty of modern French writers—M. KARR, to write the history of the new *myths*, to tell us how the flowers have been transformed into mortals, and the whole story of their joys and sorrows.

We cannot better unravel this piquant idea, or convey to our readers a notion of the delicate and graceful style in which the work is written, than by quoting the following introductory remarks:

"Learned antiquaries have ascertained and plainly described the spot where the earthly paradise was situated. We know with what trees those celestial grounds were planted, and what countries adjoined them

on the north, the south, the east, and the west. Thanks to these researches, the topography of Eden would appear to advantage in the charts of the Land Registry, or among the files of the Recorder of Deeds.

"No philosopher has busied himself in determining exactly the geographical site of the place occupied by the Flower Fairy. We are left, in this respect to mere conjecture. Some place it in the kingdom of Cashmere; others say it is southeast from Delhi. While some think it is on the table land of the Himalaya, others suppose it to be situated in the centre of the island of Java; in the midst of some vast forest, which, by its labyrinthine and prolific vegetation, protects it from unseasonable visits, and from the research of exploring travellers.

"We alone are acquainted with the route to the Flower Land; but a solemn oath forbids us to reveal it. The newspapers would get there as soon as we could; and God only knows to what condition they would soon bring that unhappy country, which as yet has experienced no revolution, but the one which we are about to describe.

"If the reader would accompany us thither, he must suffer his eyes to be bandaged. We must also examine his pockets; lest, like Tom Thumb, he scatter seeds on his way, to identify his path. Now we have commenced our journey, and the bandage may drop as soon as we arrive.

"Do you not feel around your brows a softer and sweeter air than you ever breathed before? Do you not perceive, in spite of the obscurity which veils your sight, a light more brilliant, and penetrating, and delightful, even than that which shines on your native land? It is because our journey is accomplished. We are now in the domains of the Flower Fairy.

"Here is a garden where the productions of every zone and clime are united, and live together in friendly brotherhood. The brilliant tropical flower is seen by the side of the violet, the aloe near the periwinkle. Palm trees spread their fan-like leaves above a grove of acacias, whose white flowers are faintly tinged with red. Jasmines and pomegranates mingle their silver stars and their crimson glow. The rose, the pink, the lily, and a thousand flowers which arrest the eye, but which we need not name here, mingle in harmonious groups, or form beautiful arabesques. All these flowers live, breathe, and converse, as they interchange odors.

"Round the feet of the trees, shrubs, and plants, countless little rills flow, wildly meandering. The water runs over diamonds, whose light flickers and plays, as it comes reflected with tints of gold, of azure, and of opal. Here butterflies of every shape and hue, shun and chase each other in their mingled flight. Now they float—now wheel—now alight—and now rise, with wings of amethyst, of onyx, of turquoise, and of sapphire. There is not a bird in the garden; yet you seem to be enveloped by

a universal harmony, as in one of those concerts which we hear in our dreams; and this is the breeze which sighs, murmurs, plays, and sings some melody to every flower.

"The palace of the fairy is not unworthy of this wondrous place. A genius, who is her friend, has collected those threads of silver and of gold, which, in the mornings of early spring, float from plant to plant. These he has braided, interwoven, and formed into graceful festoons. The whole palace is composed of this charming filagree. Rose leaves form the roof, while the blue bird-weed fills the interstices of the light trellis, which extends like a curtain round the fairy, who, indeed, is seldom at home: occupied, as she is, in visiting her flowers, and watching their happiness.

"Does any one think that a flower can never be unhappy? It would seem to be impossible; and yet nothing is more certain. One fairy found this by her own experience.

"One fine spring evening, as the Flower Fairy was gently rocking in her hammock of interwoven convolvuli, idly thinking of these other mysterious flowers, which we call stars, suddenly she thought she heard a distant rustling—a confused noise. 'It is the sylphs,' thought she, 'who come to woo the flowers;' and she relapsed into her reverie. But soon the sounds became louder, and the golden sand resounded under steps more and more distinct. The fairy sat erect, and beheld approaching a long succession of flowers. They were of all ages, and of every rank. Full-blown Roses, already on their decline; these walked surrounded by their young families of buds. All distinctions were overlooked. The aristocratic Tulip gave her arm to the vulgar and plebeian Pink. The Geranium, proud as a financier, walked side by side with the

tender Anemone; and the haughty Amaryllis listened, without much disdain, to the rather vulgar conversation of the Bladder-nut tree. As it often happens in well arranged societies, at times of great emergency, a forced reconciliation had taken place among the flowers.

"Lilies, with their brows encircled by butterflies, and Bellflowers, with glow-worms shining like living lanterns among their petals, lighted the procession; which was brought up, in a somewhat disorderly manner by a careless troop of Daisies.

"The procession drew up in good order before the palace of the astonished fairy, and an eloquent Hellebore, stepping from the ranks, thus addressed her:

"YOUR MAJESTY—

"The flowers here present, beg you to accept their homage, and to lend a favorable ear to their humble complaint. For thousands of years we have supplied mankind with their themes of comparison; we alone have given them all their metaphors; indeed, without us, poetry could not exist. Men lend to us their virtues and their vices; their good and their bad qualities; and it is time that we should have some experience of what these are. We are tired of this flower-life. We wish for permission to assume the human form, and to judge, for ourselves, whether that which they say above, of our character, is agreeable to truth."

"A murmur of approbation followed this speech. The fairy could not believe the testimony of her own eyes and ears.

"What," said she, "do you wish to change your existence, so like that of the gods, for the miserable life which men lead? What is there wanting to make you happy? Have you not for your adornment diamonds of dew?—conversations with the zephyrs for your entertainment?—and the kisses of butterflies to make you dream of love?"

"The dews make me take cold," said, with a yawn, the Belle de Nuit.

"The songs of the Zephyr tire me to death," said a Rose. "He has repeated the same thing for these thousand years. The poets of an academy must surely be more amusing."

"What care I," murmured a sentimental Periwinkle, "for the caresses of the butterfly, since he never participates in the enjoyment? The Butterfly is the very symbol of selfishness. He would not know his own mother; and his children, in their turn, would not recognize him. How can he have learned anything of love? He has neither a past nor a future; he remembers nothing, and is himself forgotten. Men alone know how to love."

"The fairy turned upon the Periwinkle a mournful look, which seemed to say—'And thou, too,!' She felt that her efforts to put down the rebellion would be unavailing; still, she resolved to make one more attempt.

"Once upon the earth," said she to her revolted subjects, "how do you intend to live?"

"I shall be an author," said the Wild Rose."

"And I a shepherdess," added the Cornpoppy.

"I shall come out as a marriage-maker,—I as a schoolmaster,—I as a teacher of the piano,—I as a trinket vender,—and I as a fortune teller," exclaimed, altogether, the Orange flower, the Thistle, the Hydrangea, the Iris, and the Daisy.

"The Larkspur talked of his debut at the opera; and the Rose vowed that when she should have become a duchess, she would have the satisfaction of crowning *rosières** without number.

"Many flowers were there which had al-

* Young maidens who have won the prize of goodness.

ready lived, and which declared that life among men was very comfortable and agreeable. Narcissus and Adonis had been the secret instigators of this revolt; especially Narcissus, who longed to know how a beautiful youth would look in a Venetian mirror.

"The Flower Fairy remained for a while plunged in thought. She then addressed the rebels in a sad, but decided voice:

"Go, deluded flowers; let it be as you propose. Ascend upon the earth, and try human life. Ere long you will come back to me."

"The history of these flowers, which were changed to women, you will find in this volume. We have collected these adventures wherever we could find them; traversing all lands, and questioning all classes of people, but keeping no record of dates or epochs. The flowers have lived, to a certain extent, everywhere. You may have been acquainted with some of them, and not suspected it. It is very unfortunate that they have not thought fit to make more disclosures, or to write their own

memoirs. This would have relieved us from much trouble—would have saved us many, many steps, and, more than all, many mistakes.

"In concluding this introduction, we must inform you that the fairy did not grant the desired permission, without silently resolving that she would be revenged. The next morning her garden was a desert. One flower alone remained—the solitary Heath-plant—which blooms perpetually.

"Symbol of undying love! she well knew that for her there was no place on earth."

The fertile invention of GRANDVILLE has, in the illustration, presented the flowers embodied in female guise with singular felicity of *form* and *expression*. And the little stories of their lives—some unhappy because they preserved faithfully their original characters, and others because they endeavored to change them—is full of a delicate and touching moral. To such of our fair readers as do not already possess this ingenious and agreeable work, we beg leave to recommend it as one of the most attractive literary novelties of the season.

FOREIGN NOTICES.

GARDENING IN SWEDEN.—In the neighborhood of Stockholm, the grounds attached to the Royal Academy are several of them very fine, and all laid open to the public, and places of much resort on Sundays and holidays. Those I have seen are Drottningholm, the largest, about five or six miles from the town; and, in the immediate vicinity, Rosendal, Haga, Carlsberg, now the Military Academy; and Üriesdal, now the Invalid Hospital. All have the advantage of lake scenery, and the drive round them, winding amongst wooded rocks, rich corn-fields and meadows, country seats and gardens, is one of the most enjoyable I know. In making this tour, we visited the horticultural establishments here, and, first, the garden of the Horticultural Society, situated partly within the town, in the northern suburb. It contains eight or ten acres, and is under the management of Mr. Müller, the head gardener, now absent. There is a considerable collection here, but many of the things rather too botanical, and from the way in which it

is kept, it does not look as if so much importance were attached to it as one would have thought. The Society numbers 2000 members, at an annual subscription of three dollars banco (about 5s). Three exhibitions are held in May, July, and August, which are said to be very well attended, and where medals are awarded as prizes, and, what is not very horticultural, the garden is used occasionally on summer evenings for those out-of-door concerts, which the Swedes as well as the Germans are so fond of. A much better kept and more interesting garden is that of the Bergian Gardener's School, as it is called, under the management of Mr. Lundström, and the superintendence of the Academy of Sciences. This establishment was founded originally by the botanist and traveller Bergius, and attached to the Academy of Sciences as a school of instruction for gardeners. The arrangement now made is that the academy lets the ground (for a considerable rent) to Mr. Lundström, who is allowed to cultivate it as a nursery garden

under certain restrictions and supervision as to variety of cultivation, order, and neatness, &c., and who undertakes to instruct in practical gardening a certain number of pupils (usually about a dozen,) to whom the academy has lectures delivered in a building erected for the purpose, containing also a residence for the lecturer. Mr. Lundström, as gardener, has also a very agreeable residence in the garden. The present lecturer and superintendent, on the part of the academy, is Professor Wikström. Mr. Lundström is the great nursery and seedsman of Stockholm; has realised a considerable fortune; is a knight of the order of Wasa, and possessor of a landed estate and country seat. The garden (that is to say the part cultivated as a nursery,) contains about seven *tonners*, a measure, I believe, larger than our acre, and is in excellent cultivation, containing a great variety of trees, shrubs, ornamental as well as economical, and kitchen-garden plants all in very neat beds or rows, and all labelled. The establishment is said to turn out very good gardeners.

The Agricultural Academy's experimental garden is also within a couple of miles of Stockholm, and appears to be very well conducted under the immediate management of the gardener, Mr. Stenberg, and the superintendence and inspection of Professor Wahlberg, who, unfortunately for me, is now absent on an excursion in Scania. A considerable variety of corn, as well as of grasses, and other forage roots, &c., are here cultivated in larger or smaller patches, according to the particular object in view. By repeated experiments, and comparative cultivation, the gardener finds the *Festuca arundinacea*, Schreb. (*F. littorea*, Wahlenb.) the best of all grasses, at least for all Swedish soils, and certainly a field of it in this garden looked remarkably well—tall-growing, but with a great deal of foliage, and the whole field was very regular and thick, and cattle are said to be very fond of it.

I have, as usual, made inquiries here about potatoes, which are very much cultivated in Sweden. The disease last year made considerable ravages in Scania, where it was as bad as in Denmark; but northward it was much less prevalent, and in this neighborhood I am assured that there was no damage done of any consequence. About Upsala, Professor Fries observed it, and has written a pamphlet on the subject. He, though a mycologist, is entirely on the side of those who consider the fungus as a result, not the cause of the disease. Nothing has as yet appeared of the disease this year in any part of Sweden, as far as I can learn.

On the subject of vegetables, an excellent one much eaten here, but which we never get in England, is the *Pois sabre*, or *Pois sans parchemin*, of which the young pods are eaten stewed. They are very sweet, and entirely without any stringiness, even when raw. *For. Cor. Gardeners' Chron.*

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BRAZILIAN PREPARATION OF INDIA-RUBBER.—At 10 o'clock we stopped at an Anatto plantation, awaiting the tide, and here we saw the manufacture of rubber. The man of the house returned from the forest about noon, bringing in nearly two gallons of milk, which he had been engaged since daylight in collecting from 120 trees that had been

tapped upon the previous morning. This quantity of milk, he said, would suffice for 10 pair of shoes, and when he himself attended to the trees he could collect the same quantity every morning for several months. But his girls could only collect from 70 trees. The Seringa trees do not usually grow thickly, and such a number may require a circuit of several miles. In making the shoes, two girls were the artistes, in a little thatched hut which had no opening but the door. From an inverted water-jar, the bottom of which had been broken out for the purpose, issued a column of dense white smoke, from the burning of a species of Palm-nut, and which so filled the hut that we could scarcely see the inmates. The lasts used were of wood exported from the United States, and were smeared with clay to prevent adhesion. In the leg of each was a long stick serving as a handle. The last was dipped into the milk and immediately held over the smoke, which, without much discolouring, dried the surface at once. It was then re-dipped, and the process was repeated a dozen times until the shoe was of sufficient thickness, care being taken to give a greater number of coatings to the bottom. The whole operation, from the smearing of the last to placing the finished shoe in the sun, required less than five minutes. The shoe was now of a slightly more yellowish hue than the liquid milk, but in the course of a few hours it became of a reddish brown. After an exposure of 24 hours, it is figured as we see upon the imported shoes. This is done by the girls with small sticks of hard wood, or the needle-like spines of some of the Palms. Stamping has been tried, but without success. The shoe is now cut from the last and is ready for sale, bringing a price of from ten to fifteen vintens, or cents, per pair. It is a long time before they assume the black hue. Brought to the city, they are assorted, the best being laid aside for exportation as shoes, the others as waste rubber. The proper designation for this latter, in which are included bottles, sheets, and any other form excepting selected shoes, is *borácha*, and this is shipped in bulk. There are a number of persons in the city who make a business of filling shoes with rice chaff and hay previous to their being packed in boxes. They are generally fashioned into better shape by being stretched upon lasts after they arrive at their final destination. By far the greater part of the rubber exported from Pará goes to the United States, the European consumption being comparatively very small. *Voyage up the Amazon.*

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THE SEVEN ASH TREES OF TEWIN.—Upwards of 50,000 persons have, during the last five years, visited the tomb of Lady Ann Grimston, in the churchyard of Tewin, Hertfordshire, which displays one of the most extraordinary freaks in which it is proverbial that Nature delights. The masonry of the tomb—once firmly set and bound together with iron pins—is now disjointed and displaced, not by time or decay, but by the irrepressible growth of trees never planted by human hands. The appearance which the tomb presents is most singular. Within, and interlacing the iron railing surrounding the tomb, are seven ash trees connected at the root, and three sycamores also connected at the root.





DESIGN FOR A RURAL CHURCH.

[Hort: March, 1848.]

These trees, in their gradual but unceasing daily growth, for more than a century, have heaved up the stonework of the tomb, forcing it outward for some distance, and entwined round the iron railings, which, in some places, are so completely embedded in trunks of the trees that they seem to form part of them. The trees, at their base, also pass through and clasp the stone-work, as though it were a mass of earth. It is conjectured—and on no other supposition can these marvellous appearances be accounted for—that, at a period antecedent to the erection of the tomb, the seeds of the now full grown trees must have been deposited in the vault beneath; and that, there germinating, they have since forced their way towards the light, silently and gradually displacing the masonry above; and then embracing and supporting the tomb they had disturbed with their spreading branches. The superstitious credulity of the neighboring peasantry of the last generation was naturally excited by appearances so unusual, and they have handed down a legend to their sons, in which it is sought to account for the phenomenon. The story is a simple one:—It is said that Lady Anne was an unbeliever, and that she was wont to say that, “if the Sacred Book was true, seven ash trees

would grow out of her tomb.” The result evidently (as in many similar cases) gave rise to the legend. In these days, however, we require no such solution of appearances, which, however unusual, we are content to regard as beautiful illustrations of natural laws. The following inscription is still legible on the tomb: “Here lyeth interred the body of the Right Hon. Lady Ann Grimston, wife of Sir Samuel Grimston, Bart., of Gorbamby, Herts, daughter of the late Right Hon. Earl of Thanet, who departed this life Nov. 22, 1713, in the 60th year of her age.” *Morning Post*.

A SIMPLE, CHEAP AND EFFECTUAL MODE OF KEEPING AWAY BIRDS FROM FRUITS, SEEDS, &c.—Take a stick, a little bent at top, get two triangular bits of tin, bore a hole in the narrow end of each, and suspend them with cord or worsted, &c.; fix them so that they touch each other at the lower part. If the stick is not too stiff, so much the better; it is very seldom they are still; they keep up a perpetual tinkling, being so light that even the stillest air can move them. The plan is not new, but I have never seen it mentioned in print. *R. A. C. K. Gardeners' Chronicle*.

DOMESTIC NOTICES.

DESIGN FOR A RURAL CHURCH.

[SEE FRONTSPIECE.]

We have no intention, at the present moment, of entering upon the subject of church architecture. It requires volumes, and is quite too vast and too elaborate to be treated of in any superficial way. We may, however, remark in passing, how surprisingly the church architecture of our cities has been improved within the last ten years. Improved, indeed, seems scarcely the word—created, would express the fact more fully. New-York and Brooklyn are especially rich in new churches, built of the finest marble or hewn stone, and designed, many of them, in a noble and pure style.

Our rural churches are, however, in most parts of the country, sadly behind in taste and meritorious design. Heavy, rectangular wooden buildings, either ill proportioned and unmeaning, or crowned with steeples or towers, exhibiting the oddest possible combination of architectural orders, deform a great part of the middle and eastern states.

This is to be regretted. Certainly there is nothing built by man's hands, which, if properly designed, and properly kept, confers so much of dignity, poetry and interest on a rural landscape, as a beautiful country church—of sober, quiet colour—embosomed in trees, and speaking volumes at a glance, of the religious feelings, the peaceful and refined habits of the inhabitants around it.

Though we would not confine the architecture of rural churches within narrow limits, we feel very deeply the superiority of the gothic style for such edifices. All its associations, all its history, belong so much more truly to the christian faith, than do those of any other style of building, that the devo-

tional feeling seems to spring up more naturally and easily within its walls than in any other.

The besetting sin of builders of country churches, is that of copying the fine churches of towns. This is a great mistake. It is rarely that sufficient means is found in a country congregation to build more than a modest edifice. If, with these limited means, an imitation of a town cathedral is attempted, it always proves a melancholy failure. It wants the perfection, the completeness, the richness of the city church; it could not, of course, attain these; it wants the simplicity, greatness, and truthfulness, of a rural church, which it could have attained.

The frontispiece shows a view of an English country church, (which we borrow from the *London News*.) newly erected, in South Milford, Yorkshire. It is only one form from among a great variety, all of the same general style, of what might be called rural church gothic, and of which the English are especially fond. It is of moderate dimensions, the whole outside length being ninety feet: inside, the nave measuring 57 feet long, by 27 feet wide. The interior height is 37 feet. The roof is high-pitched, showing in the interior, the carved open timber-work. The windows are glazed with stained glass. The seats accommodate three hundred persons, (without galleries,) and the cost of the whole building is only £1500, (about \$7,500.)

If we contrast the beautiful and harmonious effect, so entirely in keeping with the country, of this species of rural church, and the very moderate price at which it is produced, with the unsatisfactory and incongruous effect of many of our wooden Greek temple houses of worship, every where to be seen, costing two or three thousand dollars more, we

think it is not difficult to say which style ought to be generally preferred.

Stone, it appears to us, when at all to be obtained, ought always to be the material of a church. It has an appearance of permanence, and it permits those delightful accompaniments, the ivy and other vines, which at once partially conceal and greatly heighten the beauty of a rural church; while they bring it into keeping with the verdure and freshness of the whole country around.

Three or four churches, in this simple, rural gothic mode, have been built on the Hudson, and in Massachusetts, within the last two years, and have given great satisfaction. We hope to see them become more frequent in all parts of the country.

ROSES WHICH ARE ROSES.

BY R. BUIST, PHILADELPHIA.

The favorite roses of the day are those which are *ever-blooming*. No garden is too small, no pleasure grounds are too large, to be able to dispense with ever-blooming roses—abounding, as they now do, with the greatest variety of colors, the most perfect floral forms, and the most exquisite odors.

Hundreds, almost thousands, of new varieties have been produced within the last ten years, especially in France, where whole nurseries are devoted to the culture of roses. Still it must be confessed that a great many of those sent out under new names, by one cultivator, are very slightly different from others previously originated by another, and a collector who orders hundreds of sorts, under new and striking names, is disappointed in finding so few really distinct—so very few really of the first character.

It is not an easy matter, even to the most experienced cultivator, to make *small selections*, comprising “gems of the first water.” But still a good deal may be accomplished, and a comparison of different opinions will gradually establish all points. Since it is part of the province of our journal to gather and disseminate this knowledge, most useful to the uninitiated, we have asked Mr. BUIST, one of the most accomplished florists in America, to give us his opinion, which he has obligingly done in the following letter.—Ed.

DEAR SIR:—In yours of the 20th ult., you request me to furnish you with the names of half a dozen each of the best *Bengal*, *Tea*, *Bourbon*, and *Hybrid Perpetual Roses*. The following is the result, after carefully considering colour, habit, perpetuity of bloom, and certainty of perfection, admitting that being limited to so few of each quality, that as many more might be selected of equal merit.

I. BENGAL—6 best sorts.

ARCH DUC CHARLES, color, *changeable crimson*.
 CRAMIOSE SUPERIEUR, } *bright crimson*.
 or *Agrippina*,
 LADY WARRENDER, *pure white*.
 MADAM BREON, *rose*.
 VESUVIUS, *dark crimson*.
 VIRGINALE, *blush*.

II. TEA—6 best sorts.

ADAM, *pale rose*.
 DEVONIENSIS, *creamy blush*.
 MADAM BRAVY, *pale blush*.
 MADAM DESPREY, *pure white*.

TRIOMPHE OF LUXEMBURG, *changeable salmon or rose*.

VICOMTESSE DECAJES, *changeable pale salmon*.

III. BOURBON—6 best sorts.

DUPETIT THOUARS, *changeable crimson*.

HENRY CLAY (BOLL'S) *bright red*.

LEVESON GOWER, *flesh colour*.

MADAM NERARD, *waxy blush*.

SOUCRET, *dark crimson*.

SOUVENIR DE LA MALMAISON, *pale blush*.

HYBRID PERPETUALS.

ARICE, *satin rose*.

LADY ALICE PEEL, *bright rose*.

LANE, *crimson*.

LA REINE, *lilac rose*.

MADAM DAMEME, *dark crimson*.

YOLANDE D'ARAGON, *blush*.

You will observe that I have not regarded *rarity* or *catalogue celebrity*. Merely rare roses are frequently more beautiful in name than charming in flower; for instance, the *Madame la Princesse Adelaide* is far inferior to the *Devoniensis*. Yours most respectfully, R. Buist, Philadelphia, Feb. 17, 1848.

A. J. DOWNING, Esq.

QUERIES—SELECTION OF FRUIT.—TO THE EDITOR—I have had but little experience in the propagation or cultivation of fruit trees, but am becoming more deeply interested daily. Our section of this county affords but very indifferent apples, and our pears, plums, cherries, peaches, &c., do not deserve the name of *selections*—they are rather *accidents*, and there are but few of such. I have been greatly benefitted and enlightened by the queries which have been put and answered, in the pages of “the Horticulturist,” and, if it would not be asking too much, I should be glad to have answers from thyself, or some one or more of thy intelligent correspondents, to the following queries, viz:

1st. In the no. for Dec. 1846, there is an able article on “Root Grafting,” by “F. K. PHENIX.” He speaks of having had no experience in grafting the pear and plum on their own roots, and *boxing*, but says, “I have often root grafted them in the *spring*, and with the best success.” How, on bits of roots and planting them out at once in the nursery rows? What are its advantages? And what are the advantages of F. K. P.’s method of splice or tongue grafting and waxing? I have a friend who root-grafts 50,000 apples annually, in the simple cleft-graft manner, and without wax, and with good success, and this is certainly more speedy. (a)

2d. In the May number there is an interesting article from ROBERT NELSON, on “autumn grafting and spring budding.” In spring budding, should the top of the stock be cut off at the time of the insertion of the bud, or after the bud has fairly started to grow? [Cut off the top at the time of budding.—Ed.]

3d. In the number for August there is a very valuable article on “growing quinces,” by “An old Orchardist,” but he seemed to leave us in the dark relative to his mode of propagating the tree, previously to transplanting to the orchard. Should they be raised from the seed—from cuttings—from seedlings—budded or grafted? If from cuttings, what would be suitable for that purpose?—suckers from

old trees—slips from young ones, or is it necessary to cut them from the current year's growth of bearing trees? What is the after treatment, and how soon will they be fit to transplant? (b.)

4th. How is Quince-seed cleaned; and what is the best method of preserving that, and the other leading fruit seeds, during the winter? (c.)

5th. Where a nursery soil has a tendency to "bake," is it not better to plant these seeds in the spring, rather than in the autumn? (d.)

6th. What are nine of the MOST PROFITABLE apples for MARKET culture—three each, for the summer, autumn and winter seasons, and having in view hardiness, vigor, and productiveness?

7th. Do. of pears?

8th. Do. of plums, early, medium, late?

9th. Do. of cherries, early, medium, late?

10th. Do. peaches, early, medium, late?

I will not trespass further at present, but subscribe myself, respectfully thine. J. F. East
Fallowfield, Chester co., Pa., Feb. 10, 1848.

ANSWER.—(a.) The advantage of *splice grafting* over the *cleft* mode, is greater certainty of success, since the parts of the stock and scion are brought more perfectly into contact. This is much more apparent in grafting *above ground* than *below*. Indeed, many persons dispense altogether with grafting-wax or clay, when the graft is buried below the surface, though it must be confessed that, if the season is dry, the grafts often fail without it.

(b.) Quinces are usually raised from seed, and from cuttings. The apple and pear quince usually produce the same from seed, and perhaps the most vigorous and long lived plants are raised in this way. Cuttings may be made of the previous season's wood, whenever thrifty, healthy shoots can be found. Those taken from upright shoots of the luxuriant young trees, will make the healthiest and best plants. Plant the cuttings in the spring, in a cool, shady, north border, where they will soon strike root, and be ready to transplant the next spring. Cut out the buds that go below the surface, as shown in our work on Fruits, p. 27.

(c.) Quince seed is cleaned by allowing the mass of pulp or cores, first to lie for several days together, till it becomes soft, then rubbing it in water and passing the pulpy part through a sieve, leaving the seeds behind. The best mode of preserving that and other fruit seeds through the winter, is in shallow boxes of damp sand, placed in a cool cellar.

(d.) Clayey soil, that is liable to "bake," is hardly suitable for raising seedlings, without a plentiful admixture of sand in the soil of the seed beds. If a compost of peat and ashes is used for enriching such soil, it will prove better than common manure, produce less weeds, and keeps the soil light. When seeds are planted in the open seed-beds in autumn, the beds should be covered during winter, with leaves, straw or peat, to prevent the seeds being thrown out by the frost. Spring planting enables you to avoid this, but it requires as much or more care to prepare and plant the seeds in boxes, so that the latter, though by far the most *certain* mode, is only employed by cultivators generally, for the more select kinds of the seeds.

(d.) It is exceedingly difficult to give such lists. Every state, almost every district, has peculiarities

of soil and climate, which make particular sorts valuable there, that are only considered second rate in other localities. Still we will endeavor, knowing something of Chester co. Pa., to give selections of a few PROFITABLE MARKET FRUITS, as follows:—

1st. *Selection of apples*.—Early Harvest, Large Yellow Bough, William's Favorite, (summer;) Porter, Gravenstein, Holland Pippin, (autumn;) Rhode Island Greening, Yellow Belle-flower, Roxbury Russet, (winter.)

2d. *Selection of Pears*.—Bartlett, Dearborn's seedling, Andrews, (early;) Washington, Heathcot, Louise Bonne de Jersey, (medium;) Van Mon's Leon le Clerc, Vicar of Winkfield, D'Aremberg, (late.)

3d. *Selection of Plums*.—Cherry, True Peach, Prince's Yellow Gage, (early;) Jefferson, Smith's Orleans, Lombard, (medium;) Coe's Golden Drop, Autumn gage, Coe's Late Red. (late.)

4th. *Selection of Cherries*.—Baumann's May, May Duke, Black Tartarian, (early;) Downton, Bigarreau, Black Eagle, (medium;) Downer's late, Plumstone Morello, Sweet Mountmorency, (late.)

5th. *Selection of Peaches*.—True Early York, Crawford's Early, Yellow Rareripe, (early;) George IV, Bellegarde, Morris' Red Rareripe, (medium;) Crawford's Late, Rodman's Cling, Heath Cling, (late.)

.....

EXTREME COLD DAY AT THE NORTH.—Dear Sir: Thus far this winter, we have had very little snow, with unusually mild weather, except on the morning of the 11th January, when our thermometers ranged from 21 to 24 degrees below zero. Of course, the fruit buds of the peach, apricot, and other tender fruits, are killed. To show that severe cold is the cause of the injury, I have examined (since the hard frost) some branches, trimmed from our peach trees about the middle of November, and lying under the trees, the buds of which were sound, having been protected by about four inches of snow—the buds on the trees from which they were cut are all dead. Our nurserymen complain that their *Peach plum* and *Columbia plum* trees are badly frost-bitten; also some kinds of pear—*Bartlett*, *Columbia*, *Hericart*, &c. One of them tells me that his oldest plantation of pears, which do not receive the sun in winter till after the middle of the day, have never been frost-bitten, while those in his newer plantation, which have the morning sun, were much injured last winter as well as this. He thinks sudden thawing is the cause of the blight in his trees. Yours truly, Charles H. Tomlinson. *Schenectady, 21st January, 1848.*

[See a very interesting article, by Mr. BARTLETT, in our last vol. (p. 549) on the effects of low temperature on vegetation. Mr. B. states that the blossom buds of the peach are killed when the mercury in Fahrenheit's thermometer falls to 14° below zero.—ED.]

.....

OHIO NURSERYMEN AND FRUIT GROWERS' CONVENTION.—We have received an interesting pamphlet, of 46 pages, illustrated with several outlines of fruits, being the proceedings of the convention, held at Columbus, O., last September, and now just published. We shall notice it more fully in our next.

RULES OF AMERICAN POMOLOGY.—It is gratifying to learn that these rules are being adopted by the leading horticultural societies over the whole Union. They cannot but be most essentially beneficial in regulating the nomenclature of fruits, determining the real merits of new varieties, and establishing uniformity in names. The following societies have already adopted these rules:—The HORTICULTURAL SOCIETY OF MASSACHUSETTS, of PENNSYLVANIA, of CINCINNATI, of NEW HAVEN, of ST. LOUIS, the ALBANY AND RENSSELAER SOCIETY, and the NEW HAVEN POMOLOGICAL SOCIETY.

We have also just received a note from the Secretary of the NEW YORK STATE AGRICULTURAL SOCIETY, informing us that that society had adopted substantially the same rules, omitting the last article—rendered unnecessary by the fact that the society, in March, 1847, passed a special rule, making our work on *Fruit Trees*, the *standard authority* of the society.

As there were several errors in the copy of those rules first published, we reprint them again, from a corrected copy, furnished us by the committee of the MASS. SOCIETY, in order that other societies disposed to adopt them hereafter, may have them in a correct form. [Want of room compels the printer to postpone the rules 'till next month.]

.....
"GEN. HAND PLUM."—Why is this plum so little cultivated? It certainly is meritorious. It has fruited in our town several seasons—is a fair, *large* yellow plum, and, to us, appears superior to many others cultivated. Can it be an old variety, deserving of cultivation, and yet passed by? I see it noticed in only one printed catalogue, out of a dozen, in my possession, (PRINCE'S, and there priced 75 cents.) I believe it is of American origin. It was introduced into our county by Mr. SAM'L CARPENTER, nurseryman, who received it through Dr. HAND, of Pennsylvania, I believe. I received a tree of it, also, from Hon. JAS. MATTHEWS. I can furnish a few scions of it if desired.

Permit me to bring to your knowledge, a *nectarine*, which was first brought to my notice by Hon. James Matthews, of Coshocton, O., from whom I received a tree in bud, last spring. Mr. Matthews, in a communication to me, says, "Baker's seedling," a nectarine, which bore fruit in 1847 for the first time, is an early and a splendid fruit, supposed to have come from the seed of a peach planted by Mr. BAKER. I hope Mr. M. or Mr. Hamrickhouse will furnish you with a correct description of the fruit. Respectfully yours, &c. *A. Fahnestock. Lancaster, Ohio, Jan. 21, 1848.*

[We have procured the "Gen. Hand plum," twice from Maryland, of Messrs. CORSE & SINCLAIR, Baltimore, who have cultivated it for some time, but we have never yet seen it in fruit. Messrs. C. & S. were unable to give us its history, and it is little known generally, though it has a high reputation in Maryland. Will our correspondent send us specimens of the fruit and leaves the ensuing season?—ED.]

.....
FIRE-BLIGHT AT CINCINNATI.—Your valuable magazine for this month, is just come to hand. In it, your correspondent, Dr. WENDELL, of Albany,

in taking exceptions to some of my views of the causes of the fire-blight in the pear tree, remarks, "I only wish, at present, to propound a question or two, for response from yourself and Mr. Ernst. Only for this, and so no errors into which I think Dr. Harris has been led, in the application of his *Insect theory*, I should not again presume on your patience. In reply to Dr. Wendell, "if frozen or scalded sap causes this form of blight, why is it, that, as a general rule, bearing trees, or those of bearing age, are the only ones attacked?" I have only to point to his own experience, in the case of the *Bergamot d'Esperin*, and the *Colmar d'Arenburgh*, which were destroyed the next year after budding, as proof against this idea. And that my exertions for twenty years, have not enabled me to fruit more than one variety to eight or ten, from this cause. It is a very common thing for seedling pear trees, grafts and buds, of the *same year*, to be cut down with the blight. I presume that this is not the effect of a previous winter's frost, or the effect of Dr. HARRIS' *Scolytus Pyri*.

I make no objection to Dr. HARRIS' establishing the fact, if it be one, that the *Scolytus Pyri* does injuriously affect, and perhaps destroy the pear trees. But I object to calling its ravages the FIRE-BLIGHT. I am not aware that any one entertains the idea, (I certainly do not,) or "supposes that the female *Scolytus Pyri*, by anticipation, deposits her eggs only on those limbs which are to become affected by fire-blight, or frozen sap blight." My knowledge on these subjects being purely the result of *practical observation*, and not *scientific research*, it is probable that I may have fallen into an error, as to the *Scolytus Pyri*, or its habits. One thing, however, I cannot be much mistaken in; that of a strong similarity in vegetable and animal substances to attract insects, when in a state of corruption, or at death, and that it hence is not safe to charge on all such as may be found there, the sin of the mischief.

The Dr. says, "Having no *theory* to maintain, and no *speculations* to offer but such as are founded on fact, I propose to show that insect blight is a disease distinct from fire blight and frozen sap blight." I wish the Dr. had been more distinct and clear on this point. The difficulty is to define where the insect blight ends, and the others may justly be charged with the *mischief*.

"How can we reason but from what we know." He further remarks, "It should be remembered that the *Scolytus Pyri* requires a year, or thereabouts, to complete its transformation," and thinks "it may not be generally known that apple, apricot and plum trees are attacked by the *Scolytus Pyri*." Here in the west, we find not only the apple, apricot and plum trees, but the quince, and at times other trees are attacked by something that bears a strong resemblance to some of the forms of the blights I have seen in the pear tree. This, however, never proves fatal to more than the ends or a portion of the branch in which it appears. I am inclined to believe this may be the effects of the *Scolytus Pyri*—that from this cause it has been confounded with the fire blight, and that here is the true dividing ridge. I do not wish to be understood as asserting the fact, but I suggest it for inquiry. And also, if this may not be the extent of its mischievous

operations on the pear tree. Those interested in this inquiry will unite with me in thanking the Dr. for this intelligent description of the *Scolytus Pyri's* operations, and the time it is in perfecting. It fixes a point from which future investigations can and will be made. It, too, yields the long disputed point that there are other causes of malignant blight. And as it "requires a year, or thereabouts, to complete its transformation," its work of destruction is, of course, proportionally slow, and not so instantaneous as the unscientific inquirers had been led to believe. Not meaning to tire your patience, or again advert to the subject, unless I can reason from what I know. I remain very respectfully, yours,
A. H. Ernst. Cincinnati, O., Feb. 11th, 1848.

ALBANY AND RENNELAER HORTICULTURAL SOCIETY.—The Society met at the agricultural rooms, Albany, Feb. 11th, 1848, pursuant to notice. P. V. DUOW, one of the vice-presidents in the chair. Dr. Herman Wendell, from the committee chosen at the last meeting, to propose a premium list for 1848, reported a list, which was adopted, and which will be published hereafter. After various amendments were made to the rules, and notices of intended alterations to the constitution given, the following gentlemen were appointed by the chair, to report a list of officers and committees for 1848, to the Society, at the May meeting:—E. P. Prentice, D. Thomas Vail, V. P. Douw, Herman Wendell, Wm. Buswell, Wm. Newcomb, and Amos Briggs.

The committee on fruits reported that there was exhibited by Dr. J. P. Beekman, of Kinderhook, Columbia county, beautiful specimens of Newtown Pippin and Swaar Apples.

By Thomas M. Burt, of Kinderhook, fine Esopus Spitzenburgh and Swaar Apples.

By Henry Snyder, of Kinderhook, nurseryman, very beautiful Roxbury Russets, Vandervere, Lady Apples, and seedling winter Pears.

By Peter Kingman, of Kinderhook, Bristol Apples, a very good and beautiful sweet apple.

By Albert Martin, per Amos Briggs, of Schaghticoke, Rensselaer co., Blue Pearmain and Swaar Apples.

By Joseph Mosher, per Amos Briggs, Scalloped or German Gilliflower Apples.

By Roswell S. Brown, per Amos Briggs, Westfield Seek-no-further Apples.

By Julius Rhoades, Albany, Northern Spy Apples, from the Chapin orchard, in Ontario county.

By E. C. Frost, of Catharine, Chemung co., Winter King Apples, a very beautiful, as well as valuable late winter fruit.

By Dr. Herman Wendell, Albany, Newtown Pippin, and Male Carle, or Pomme de Charles Apples, Inconnue de Van Mons, Easter Beurre, and Prince's St. Germain Pears.

By Wm. Newcomb, of Pittstown, Roxbury Russets, Westfield Seek-No-Further, Rhode Island Greening, Blue Pearmain, Fall Greening, Black Gilliflower, Pound Sweet, Esopus Spitzenburgh, Red Gilliflower, and two seedlings.

The committee have awarded the premium on Winter Pears, to Dr. Herman Wendell, 3 00
The first premium on Winter Apples, to Wm.

Newcomb, of Pittstown,..... 3 00

The second, on Winter Apples, to Dr. Herman Wendell,..... 2 00

The committee beg leave to recommend that the thanks of the Society be tendered to Dr. J. P. Beekman, T. M. Burt, Henry Snyder, and Peter Kingman, of Columbia county, and also E. C. Frost, of Chemung county, and to the gentlemen from Schaghticoke, for their contributions to the exhibition.

Feb. 11th, 1848. V. P. DUOW, } Com.
WM. BUSWELL, }

The committee on Floral Designs, Bouquets, &c., reported that there were exhibited by the president of the society, Col. Rathbone, three beautiful bouquets, composed of choice green house flowers, and arranged with good taste, by his gardener, John Sloan, to whom they awarded the premium of \$2.

The committee regret that the extreme cold weather, the mercury being below 0, prevented a greater display.

Feb. 11, 1848. HERMAN WENDELL, } Com.
D. THOMAS VAIL, }
J. McD. MCINTYRE, }

The committee on Green House Flowers, reported that there was exhibited by Jas. Wilson, of Albany, the following display of very beautiful Camellia Japonicas, viz: Queen Victoria, Chandlerii, Doncklarii, Saccii Magnifique, Sesanqua Rosea, Amabilis, Candidissima, Henri Favre, Prattii, Sarah Frost, Marchioness of Exeter, Double White, Carnea, Carswelliana, Picturata, Sherwoodii, Rose Plomo, "Gunnelliana," Tricolor, Imbricata, William IV, Double Striped and Elata; Ericas, Boweiana, and Transparens; Eschynanthus Grandiflora, Poinsettia Pulcherimum, twenty varieties beautiful Pansies, Chinese Primroses, &c.

The committee awarded the premium of \$3, for the best six varieties exhibited, to Mr. Wilson; the varieties were Fimbriate, Carswelliana, Sarah Frost, Gunnelliana, Imbricata, and Candidissima. They also awarded the premium of \$2 for the second best six varieties, to Mr. Wilson; the varieties are Henri Favre, Amabilis, Double White, Saccii Magnifique, William IV, and Queen Victoria. They awarded to Mr. Wilson, a premium of \$2, for his beautiful display of Pansies

Albany, Feb. 11, 1848. WM. NEWCOMB, } Com.
L. MENAND, }

The committee on Discretionary Premiums, reported that there was exhibited by Col. Rathbone, three bunches of Asparagus, evincing great skill in his gardener, John Sloan, to whom they have awarded a premium of two dollars.

Feb. 11, 1848. J. McD. MCINTYRE, } Com.
D. THOMAS VAIL, }
HERMAN WENDELL, }

The several reports were accepted, and the Society adjourned. Signed,

B. P. JOHNSON, Sec'y.

BUFFALO HORTICULTURAL SOCIETY.—At the Annual Meeting of the Buffalo Horticultural Society, held Feb. 9, 1848, the President, LEWIS F. ALLEN, in the chair, on motion, it was

Resolved, That the Society proceed to the election of officers for the ensuing year.

The president, Lewis F. Allen, declined being a

candidate for re-election; the Secretary, C. F. S. THOMAS, also declined being a candidate for re-election, whereupon,

W. R. COPPOCK, was unanimously elected President, and the following Vice Presidents:

Lewis Eaton,	C. F. S. Thomas,
Orlando Allen,	Abner Bryant,
H. B. Potter,	Joseph Dart,
Dr. G. F. Pratt,	Wm. W. Mann,
	Robert M'Pherson.

Treasurer—John R. Lee.

Corresponding Secretary—Benj. Hodge.

Recording Secretary—William Coleman.

STANDING COMMITTEES.

Flowers and Flowering Plants.—W. R. Coppock, C. F. S. Thomas, and Elijah Ford.

Fruits.—Lewis Eaton, C. Taintor, Lewis F. Allen.

Vegetables.—H. W. Rogers, W. W. Mann, and H. A. Parsons.

Resolved. That the thanks of the Society be extended to W. R. Coppock, for the able manner in which he has reported the proceedings of this Society for the last year.

Resolved. That the members of this Society be entitled to receive from the store of L. S. Reynolds, 20 lbs. of Guano each, upon presenting a member's ticket for 1848.

Resolved. That the thanks of this Society are cordially tendered to our late President, Lewis F. Allen, for the able, impartial and energetic manner in which he has discharged the duties of his office during the last three years—and that it is with pleasure we indulge the hope of his efficient co-operation with us in the government of the Society for many years to come.

WARD'S CASES.—In the January number, I notice some accounts of growing plants in "Ward's Cases," by your able correspondent, Dr. Wm. W. Valk. Now what I wish is, some more definite account of said case, its form and construction, and especially what kind of plants may be most successfully grown in it; and whether they will *bloom* as freely and fully in it as elsewhere. With our plants in the parlor we are all more or less troubled with the aphid, red spider and dust, so that before winter is half gone, many lose their plants altogether, and those which survive look like *Pharaoh's lean kine*. If the Rose, Pelargonium, Camellia, Orange, &c., will flourish and bloom in such a case, and if it can be constructed with a door, so that some of the pots can be exchanged from time to time, to give variety, it seems to be the very ARTICLE needed in our parlors and sitting-rooms, to take the place of the pots and other vessels, by which our windows are now encumbered and sullied. Some further information on this subject would gratify an amateur of flowers. With due respect, yours, &c. E. G. Bridgewater, Mass., Jan. 7, 1848.

[We forwarded the above to Dr. VALK, and E. G. will find a full response in previous pages of this number.]

BLOODY HICKORY NUTS.—We have been favored by Mr. NEWLIN, of Fishkill Landing, N. Y., with specimens of some remarkably large and fair native

walnuts, or hickory nuts, from a tree growing on his premises. These nuts are nearly three times as large as those of the common shell-bark hickory, rather flattened, and with a large and excellent kernel. Altogether, it is one of the finest distinct natural varieties of our American walnuts that we have yet seen, and deserves to be propagated by spring-budding.

These nuts are not only large and excellent; they are also distinguished by a characteristic as striking as it is peculiar. About one-third of the nuts produced every year by this tree have *kernels* deeply *stained with red* throughout. These "bloody nuts," as they are called, have a flavor which is good, though quite different from that of the common sort, or the others of natural color, borne upon the same tree. So remarkable a tree, of course, has its *legend*; it would be a neighborhood unusually destitute of faith or imagination, where there is not enough of the marvellous for this. According to veritable history, then, an Indian, one of the "Wappingers," the tribe of this region, was made to expiate some of his real or supposed sins done in the body, by hanging, on this hickory-nut, which, since that day, (does "old Hickory" revolt at capital punishment?) the tree has borne, every year, a part of its crop of *bloody nuts*. The tree is a large and fine one.

PRUNING UNHEALTHY EVERGREENS.—Will you have the goodness to inform a subscriber, in your next number of the Horticulturist, whether the shortening-in system of pruning, which you recommend for peach trees, would be equally beneficial in thickening the branches and increasing the foliage of evergreens.

I have two or three of the common pine and hemlock, some fifteen or eighteen feet high, which begin to look a little like the skeleton peach tree in your book; the interior and under branches dying, and the foliage meagre and thin.

The soil is natural to the hemlock; trees of that kind, of three feet diameter, having formerly been cut and taken from almost the very spot where the young ones now stand. I would take almost any pains to see them flourishing—the branches and foliage thick and green; and therefore ask advice from experience. Would it do, just to cut off a little of the tops? *A Novice. Auburn, N. Y., February 7th, 1848.*

[Evergreens will bear shortening-in, if it is done gradually and moderately. But, we suspect that our correspondent's trees are suffering for want of proper food in the soil. If so, and he will *top-dress* the ground under his trees, as far as the roots extend, with wood ashes, at the rate of a bushel to a tree, we think they will recover their verdure and health rapidly. The ashes of hemlock or pine, often to be had where timber land is being cleared and burnt over, would be the best. ED.]

REPLANTING THE ROSE.—The Rose, even in the best soils, should be taken up every three or four years, and have its roots shortened and pruned: a portion of the soil in which it grew should also be removed, and mixed with the soil before described, [a strong rich loam, mixed one-fourth with decom-

posed stable manure.] Where the soil is poor, they should be taken up every other year, and replanted, after renewing the soil as above, or digging it with plenty of manure.

VAN MONS states, that in Belgium, the plants are uniformly taken up at the end of eight years,

and placed in fresh soil; or they are thrown away, and young plants substituted in their place. This substitution of young plants is, perhaps, the most certain mode of ensuring a continual supply of strong healthy wood and well-formed flowers. — *Parsons on the Rose.*

MASSACHUSETTS HORTICULTURAL SOCIETY.

Exhibition of Saturday, January 8, 1848.

FLOWERS.—A Seedling *Camellia*, of great beauty, from Noel J. Becar, Esq., corresponding member, Brooklyn, New-York.

Description.—A vigorous plant of fine habit; young wood, clear amber brown; foliage strong, frequently large; leaves two and a half broad, by three inches long; roundish oval, flat, coarsely dentated, acuminate, recurved at the point; petiole very short; bud quite plump and round, slightly pointed; calycinal scales, green, pubescent; flower large, three and a half to four inches in diameter, thick, with very circular and perfect outline; petals bold, numerous, arranged with great regularity and symmetry from the circumference to the centre; colour, clear rose, precisely the shade of *C. elegans*. Flowers of this variety, which had sported, were also exhibited, most beautifully spotted and mottled with white, bearing, in this respect, a close affinity to one of its parents, the *C. Donkalarii*, produced from *C. Colvillii*, fertilized by *C. Donkalarii*.

JOSEPH BRECK,

Chairman of the Flower Committee.

Exhibition of Saturday, February 12, 1848.

FLOWERS.—From M. P. Wilder, president of the society a fine collection of *Camellia Japonicas*, embracing thirty-three varieties; among them were five seedlings, very good, but not to be compared with his fine seedlings figured in the Horticultural Transactions.

Among the new varieties were *C. Teutonia*; deep flesh colour, striped with red; a remarkable fine variety; *C. Colletii*, spotted with white; *C. Nitida*, resembling a variegated bloom of *C. Imbricata*; *C. Peregrina*, curiously mottled and striped; *C. Campomolondina*, &c. Among the old sorts, *C. Donkalarii*, *C. Ochroleuca*, *C. Duchesse d'Orleans*, *Henri Favre*, *Old White*, &c. Also, *Abution Venosum*; fine specimens of *Chorizema Varium*, and a long branch of Seedling *Acacia*, from *A. Spectabilis*, not varying much from it, except it being more vigorous.

From Warren's Garden, by John Cadness, twelve fine varieties of *Camellias*, viz: *C. Lowii*, *Eximia*, *Mrs. Abby Wilder*, *Ochroleuca*, *Alba Plena*, *Imbricata*, *Grunelii*, *Candidissima*, *Henri Favre*, *Elegans*, *Middlemist* and *Leana Superba*. Also, six plants of *Primula Sinensis Plena*, and one single do., well grown; and one plant each of *Borreria Anemoneiflora* and *Pinnata*.

From Col. T. H. Perkins, by William Quant, ten fine plants of *Primula Sinensis*.

From Hovey & Co., sixteen varieties of *Camellias*, viz: *C. Imbricata*, *Myrifolia*, *Henri Favre*, *Elegans*, *Delicatissima*,

Feastii, *Floyii*, *Tricolor*, *Donkalarii*, *Corallina*, *Ochroleuca*, *Decora*, &c. Also, fine Seedling *Azaleas*.

AWARD OF PREMIUMS ON PRIMULAS.—Joseph Breck, C. M. Hovey and A. Bowditch, judges. As neither the competitors had the requisite number of varieties to receive a premium, and as the plants of each were finely grown, the judges recommend a gratuity of \$3 each, to John Cadness and William Quant.

Award of Premiums on *Camellia Japonicas*—Joseph Breck, William Quant and Thomas Needham, judges. For the best twelve varieties, the first premium to John Cadness, . . . \$8 00 For the 2d best do, the 2d premium to Wm. Quant, . . . 5 00 The judges recommend a gratuity to M. P. Wilder, of . . . 5 00

JOSEPH BRECK,

Chairman of the Flower Committee.

A business meeting was held February 5th, 1848.—President WILDER in the Chair.

The committee appointed to examine the accounts of the Mt. Auburn Cemetery, reported, that they had attended to the duty assigned them, and had received from Geo. W. Bond, Esq., of said association, a further sum of \$995.09, making a total of \$4495.09, as the society's proportion for the year 1847; which amount has been passed over to the Treasurer.

The committee also renewed the demand for the society's proportion of receipts for private internments, which was, as usual, demurred to.

MARSHALL P. WILDER,

For the Committee.

Cheever Newhall, as chairman of the Committee on Medals, reported that he had received 50 silver medals, valued at \$5 each.

Voted, That they be delivered to the Treasurer, who is authorised to have them appropriately engraved.

Voted, That the Committee on Medals be authorised to procure all such medals as may be required.

The President, as chairman of the Executive Committee, reported, on the invitation of the Natural History Society, that this society remove their library to said society's room—that it is inexpedient, and that the Secretary be requested to advise the Natural History Society accordingly.

The Executive Committee also reported, that they advise filling up the blank sum in the report of the committee on the library, with \$100.

Voted, That the chairman of the Committee on Medals have charge of all medals, and deliver them to the Treasurer, as they may be wanted.

Daniel Leach, Roxbury, Edward Burns, Brighton, Edward J. Rand and Dan. L. Smalley, Needham, were elected subscription members.

E. C. R. WALKER,

Recording Secretary.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting of the society occurred on the evening of 18th January, 1888. The President in the Chair.

The display was not extensive, owing to a change in the weather during the day to cold, hazarding an exposure of green-house plants. Yet, there was one collection the more creditable to the contributor, Mr. Robert Kilvington, which consisted of Azaleas, Camellias, Roses, etc. The President's gardener presented a handsome collection of cut Camellias, bouquets and a basket of cut flowers; also, several bunches of asparagus and heads of lettuce. Other bouquets were shown by Andrew Dryburgh, R. Kilvington, James Bisset and David Fergusson, gardener to Jos. Ripka, who also exhibited cut specimens of the Rose Souvenir de la Malmaison, and Rhododendron Cunninghamii. There was an interesting display of cultivated cranberries, from Nantucket, and a goodly collection of vegetables by Anthony Felten.

The following are the reports of the committees:—

The committee on plants and flowers reported having awarded premiums, viz: For the best basket of cut flowers, to Andrew Dryburgh; for the 2d best basket, to Robert Kilvington. For the best bouquet, to David Fergusson, gardener to Joseph Ripka, Manayunk; for the 2d best bouquet, B. Daniels, gardener to C. Cope; for the best collection of plants in pots, to Robert Kilvington. A special premium of two dollars, for a beautiful collection of cut Camellias, to B. Daniels. The committee called the attention of the society to a very beautiful specimen of the rose, named Souvenir de la Malmaison, exhibited by D. Fergusson, gardener to J. Ripka, Manayunk.

The committee on fruits report, that their attention has been called to a quantity of cranberries, of upland growth, from the island of Nantucket, raised by J. G. Gardner of that place; beautiful in appearance, and well worthy the notice of amateurs; a number of the plants are sent along for sale, and which are said to be easy of cultivation, and luxuriant bearers. Your committee respectfully recommend a premium of three dollars for the same; which was approved of.

The committee on vegetables reported that they had awarded the following premiums: For the best and most interesting display, by market gardeners, and the 2d best do., to Anthony Felten, and a special premium of two dollars to B. Daniels, gardener to C. Cope, for a fine specimen of asparagus and lettuce.

An extract of a letter to a member of the society, from Capt. Chas. Naylor, dated "National Palace, Mexico, Dec 3, 1847," was read, stating that he had made a collection of seeds for the society, and was preparing a large collection of plants, which he deferred forwarding to a more favorable season; and that he would be pleased to receive instructions from the society, as to what would be most desirable from Mexico. On motion,

Ordered, That the communication be referred to the committee on the distribution of seeds, etc.

The Corresponding Secretary reported replies from the following recently elected honorary members, viz: Hon. D. K. ESTE, Cincinnati, Ohio; Dr. J. W. THOMSON, Wilmington, Delaware; SAM'L WALKER, Boston, Massachusetts; CHEEVER NEWHALL, Boston, Massachusetts, and J. S. CABOT, Salem, Massachusetts. Also, a communication from A. H. ERNST, hon. member of Cincinnati, in relation to an interchange of grafts of fruit trees, and the correction of the names of fruits forwarded by him, to which the Corresponding Secretary was requested to reply.

The President appointed the following standing committees for the ensuing year, viz:

Committee for Establishing the Names of Fruits—Dr. Wm. D. Brinckle, Thomas Hancock, Ellman W. Keyser, James D. Fulton, and Dr. Thos. McEwen.

Committee for Establishing Premiums—Thomas Hancock, Dr. Wm. D. Brinckle, Tho. C. Percival, Andrew Dryburgh, and Isaac B. Baxter.

Committee on New Plants, etc.—John B. Smith, Dr. James H. Bradford, Tho. I. James, Dr. A. L. Ellwyn, and Joseph D. Spayd.

Library Committee—Robert Buist, Tho. I. James, Dr. Tho. McEwen, Wm. McGuigan, and James Bisset.

Committee on Finances—Isaac Elliott, John R. Brinckle, and Wm. F. Jones.

Committee for the Distribution of Seeds, etc.—Tho. C. Percival, J. Snider, jr., and John Rutherford, jr.

Committee to Superintend Exhibitions—John Sherwood, *Chairman*; John R. Baker, Isaac B. Baxter, H. B. Blanchard, Dr. I. H. Bradford, Dr. W. D. Brinckle, Robert Burwell, Alexander Caie, Wm. Chalmers, George B. Deacon, Wm. H. Dillingham, Henry A. Dreer, A. Dryburgh, Richard Feters, Peter K. Gorgas, C. P. Hayes, Wm. Johns, Wm. F. Jones, E. W. Keyser, R. Kilvington, N. Knowles, P. MacKenzie, Dr. Tho. McEwen, E. Meredith, J. E. Mitchell, T. C. Percival, Rich. Price, Peter Raabe, James Ritchie, John Rutherford, jr., Sam'l R. Simmons, C. S. Smith, W. S. Vaux, Dr. Gavin Watson, and Geo. Zauzinger.

Members elected to Honorary Membership—Nicholas Longworth, Cincinnati, Ohio; Stephen H. Smith and Levi C. Eaton, Providence, R. I. Adjourned.

THO. P. JAMES,
Recording Secretary.

Annual Meeting—The annual meeting was organized by calling Mr. E. W. Keyser to the Chair, and appointing Chas. P. Hayes Secretary. On motion, it was resolved to proceed to the election of officers for the ensuing year; whereupon, the following gentlemen were duly elected:

President—CALEB COPE.
Vice-Presidents—GER. R. PATTERSON, DAVID LANDRETH, JAMES DUNDAS and JOSHUA LONGSTRETH.

Treasurer—JOHN THOMAS.
Corresponding Secretary—THOMAS C. PERCIVAL.
Recording Secretary—THOMAS P. JAMES.

The stated meeting for February was held in the Chinese saloon, on Tuesday evening the 15th. The President in the Chair. The display consisted of several tables of Camellias, Azaleas, and Cinerarias; beautiful specimens of cut Camellias and bouquets. Of vegetables, there was a fine show; among which were asparagus, sea kale, bleached rhubarb and lettuce.

Premiums were awarded for the following: For the best six named varieties of Camellias, to B. Daniels, gardener to C. Cope. For the best six regularly shaped cut Camellias, and for the best six do. of other forms, to James Ritchie. For the best six Primula Sinensis, to B. Daniels. For the most interesting collection of plants in pots, to James Ritchie; for the second most interesting collection, to B. Daniels. For the best bouquet of cut flowers, to Andrew Dryburgh; for the 2d best do., to Peter Raabe. For the best basket of cut flowers, to B. Daniels. A special premium of two dollars to B. Daniels, for a very fine collection of Seedling Cinerarias, exhibited three months in advance of the schedule. The committee called the attention of the society to a specimen of the Mistletoe; the first, (although indigenous,) they believe, shown before the society, presented by R. Kilvington.

For the best display of vegetables, shown by market gardeners, and the second best do., to Anthony Felten. For the best display of vegetables, by an amateur gardener, to B. Daniels, gardener to Caleb Cope. The committee notice a fine display of lettuce from Caleb Cope's.

The Corresponding Secretary read a communication, received from B. P. Johnson, Secretary of the New-York State Agricultural Society, explanatory of the reception of our delegates at the fair at Saratoga.

Members Elected—Wistar Morris, L. C. Madeira, and Thompson Newkirk.
THO. P. JAMES,
Recording Secretary.

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No. 10.

THE KITCHEN GARDEN is at once the most humble and the most useful department of horticulture. It can no more be allowed to stand still than the sun himself. Luckily, (or unluckily,) man must eat; and, omnivorous as he is, he must gather food from both the animal and the vegetable kingdom.

Now there are, we trust, few of our readers who need an argument to prove what a wide difference is very often found between vegetables grown in different gardens; how truly the products of one shall be small, tough and fibrous, and those of another, large, tender and succulent. Sometimes the former defects are owing to bad culture, but more frequently to *unsuitable soil*. It is to this latter condition of things that we turn, with the hope of saying something which, if not new, shall at least be somewhat useful, and to the point.

Nothing, in any temperate climate, is easier than the general cultivation of vegetables in most parts of the United States. With our summer sun, equal in heat and brilliancy to that of the equator, we can grow the beans of Lima, the melons of the Mediterranean, the tomatoes and egg-plants of South America, without hot-beds, and with such ease and profusion that it fills a newly arrived English or French gar-

dener with the most unqualified astonishment. Hence, in all good soils, with a smaller amount of labor than is elsewhere bestowed in the same latitudes, our vegetables are produced in the most prodigal abundance.

But now for the exceptions. Every man cannot "locate" himself in precisely that position where the best soil is to be found. Circumstances, on the contrary, often force us to build houses, and make kitchen gardens, where Dame Nature evidently never contemplated such a thing; where, in fact, instead of the rich, deep accumulations of fertile soil, that she frequently offers us in this country, she has only given us the "short commons" allowance of *sand* or *clay*.

The two kinds of kitchen gardens among us, which most demand skill and intelligent labor, are those which are naturally too sandy or too clayey. It is not difficult, at a glance, to see how these might be, and ought to be treated to improve them greatly. But we have observed—such is the force of habit—that nine-tenths of those who have gardens of this description, go on in the same manner as their neighbors who have the best soil,—manuring and cultivating precisely in the ordinary way, and then grumbling in quite a different

mode about short crops, and poor vegetables, instead of setting about remedying the evil in good earnest.

The natural remedy for a heavy clay soil in a kitchen garden, is to mix sand with it. This acts like a charm upon the stubborn alumina, and, allowing the atmospheric influences to penetrate where they were formerly shut out, gives a stimulus, or rather an *opportunity*, to vegetable growth, which quickly produces its result in the quantity and quality of the crops.

But it not unfrequently happens that sand is not to be had abundantly and cheaply enough to enable the proprietor of moderate means to effect this beneficial change. In this case, we propose to the kitchen gardener to achieve his object by another mode, equally efficient, and so easy and cheap as to be within the reach of almost every one.

This is, to alter the texture of too heavy soils, by *burning* a portion of *the clay*.

Very few of our practical gardeners seem to be aware of two important facts. First, that clay, when once burnt, never regains its power of cohesion, but always remains in a pulverised state; and therefore is just as useful, mechanically, in making a heavy soil light, as sand itself. Second, that burnt clay, by its power of attracting from the atmosphere those gases, which are the food of vegetables, is really a most excellent manure itself. Hence, in any clayey kitchen garden, where brush, faggots, or refuse fuel of any description can be had, there is no reason why its cold compact soil should not be turned at once, by this process of burning the clay, into one comparatively light, warm and productive.*

* A simple mode of burning clay in the kitchen garden is the following:—Make a circle eight or ten feet in diameter, by raising a wall of sods a couple of feet high. Place a few large sticks loosely crosswise in the bottom, and upon those pile faggots or brush, and set fire to the whole. As soon as it is well lighted, commence throwing on lumps of clay, put-

The difficulty which stands in the way of the kitchen gardener, who has to contend with a very light and too sandy soil, is its want of capacity for retaining moisture, and the consequent failure of the summer crops.

In some instances, this is very easily remedied. We mean in those cases where a loam or heavier subsoil lies *below* the surface. Trenching, or subsoil-ploughing, by bringing up a part of the alumina from below, and mixing it with the sand of the surface soil, remedies the defect very speedily. But, where the subsoil is no better than the top, or perhaps even worse, there are but two modes of overcoming this bad constitution of the soil. One of those, is to grasp the difficulty at once by applying a coat of clay to the surface of the soil, and mixing it with the soil as you would manure; the other, (a less expensive and more gradual process,) is to manure the kitchen garden every year with compost, in which clay or strong loam forms a large proportion.

It may seem, to many persons, quite out of the question to attempt to ameliorate sandy soils by adding clay. But it is surprising how small a quantity of clay, thoroughly intermingled with the loosest sandy soil, will give it a different texture, and convert it into a good loam. And even in

ting on as much at a time as may be without quite smothering the fire. As soon as the fire breaks through a little, add more brush, and then cover with more clay, till the heap is raised as high as it can be conveniently managed. After lying till the whole is cold, or nearly so, the heap should be broken down and any remaining lumps pulverized, and the whole spread over the surface and well dug in.

"As an example," says Loudon, "of the strong clayey soil of a garden having been improved by burning, we may refer to that of Willersly Castle, near Mattock, which the gardener there, Mr. Stafford, has rendered equal in friability and fertility to any garden soil in the country. 'When I first came to this place,' says Mr. Stafford, 'the garden was, for the most part, a strong clay, and that within nine inches of the surface; even the most common article would not live on it; no weather appeared to suit it; at one time being covered by water; at another time rendered impenetrable by being too dry. Having previously witnessed the good effects of burning clods, I commenced the process, and produced, in a few days, a composition three feet deep, and equal, if not superior, to any soil in the country.'"—*Suburban Horticulturist*.

sandy districts, there are often valleys and low places, quite near the kitchen garden, where a good stock of clay lies, (perhaps quite unsuspected,) ready for uses of this kind.

In the *Journal of the Agricultural Society of England*, a case is quoted (vol ii., p. 67,) where the soil was a *white sand*, varying in depth from one to four feet; it was so sterile that no crops could ever be grown upon it to profit. By giving it a top-dressing of clay, at the rate of 150 cubic yards to the acre, the whole surface of the farm so treated was improved to the depth of ten or twelve inches, so as to give excellent crops.

Since a soil, once rendered more tenacious in this way, never loses this tenacity, the improvement of the kitchen garden, where economy is necessary, might be carried on *gradually*, by taking one or two compartments in hand every year; thus, in a gradual manner, bringing the whole surface to the desired condition.

A great deal may also be done, as we have just suggested, by a judicious system of manuring very sandy soils. It is the common practice to enrich these soils precisely like all others; that is, with the lighter and more heating kinds of manures; stable dung, for example. Nothing could be more injudicious. Every particle of animal manure used in too light a soil ought, for the kitchen garden, to be composted, for some time previously, with eight or ten times its bulk of strong loam or clay. In this way, that change in the soil, so much to be desired, is brought about; and the whole mass of clay-compost, made in this way, is really equal in value, for such sandy soils, to the same bulk of common stable manure.

Whatever the soil of a kitchen garden, our experience has taught us that it should be *deep*. It is impossible that the steady and uniform moisture at the roots, indispensa-

ble to the continuous growth of many crops, during the summer months, can be maintained in a soil which is only *one spade* deep. Hence, we would *trench* or *subsoil-plough* all kitchen gardens, (taking care, first, that they are well drained,) whether sandy or clayey in texture. We know that many persons, judging from theory rather than practice, cannot see the value of deepening soils already too porous. But we have seen its advantages strongly marked in more than one instance, and therefore recommend it with confidence. It is only necessary to examine light soils, trenched and untrenched, to be convinced of this. The roots in the former penetrate and gather nourishment from twice the cubic area that they do in the former; and they are not half so easily affected by the atmospheric changes of temperature.

Old gardens, that have been long cultivated, are greatly improved by trenching and reversing the strata of soil. The inorganic elements, or mineral food, of plants often become so much exhausted, in long cultivated kitchen gardens, that only inferior crops can be raised, even with abundant supplies of animal manures. By turning up the virgin loam of the subsoil, and exposing it to the action of the atmosphere, its gradual decomposition takes place, and fresh supplies of lime, potash, etc., are afforded for the vigorous growth of plants.

We have only room for a single hint more, touching the kitchen garden. This is, to recommend the annual use of *salt*, in moderate quantities, sown broadcast over the whole garden early in the spring, and more especially on those quarters of it where vegetables are to be planted which are most liable to the attacks of insects that harbor in the earth. We are satisfied that salt, spread in this way, before vegetation has commenced, or the earth is broken up for

sowing seeds, at the rate of ten bushels per acre, is one of the best possible applications to the soil.

It destroys insects, acts specifically on the strength of the stems, and healthy colour of the foliage of plants, assists porous

soils in collecting and retaining moisture, and is an admirable stimulant to the growth of many vegetables. In all the atlantic states, where it is easily and cheaply procured, it ought, therefore, to form an annual top-dressing for the whole kitchen garden.

ON THE PRINCIPLES OF VITALITY AND LONGEVITY IN FRUIT TREES.

BY PROFESSOR TURNER, ILLINOIS COLLEGE.

THE following is one of the most original and interesting articles that we have had the pleasure of laying before our readers. We shall be glad to receive the remainder of our correspondent's views which he promises us in time for next month, and will delay any comments until we have his theory complete before us.—ED.

MR. DOWNING—DEAR SIR:—I have read with much interest, the various discussions on fruit trees and their diseases, in the several numbers of the *Horticulturist*. I have delayed the correspondence which I sometime since promised, partly for want of time, and partly in order to avail myself of the advantage of a tour through northern Illinois and Iowa, to examine nurseries, and converse with practical nurserymen and fruit-growers, so as either to confirm my theory by facts, or reject it. The result is, that my views, derived, 1st, from the necessary laws of vegetable physiology, and 2d, from the results of some ten years experimenting on those principles in my own garden and grounds, have been entirely confirmed, by the experience of intelligent practical observers with whom I have conversed, that I am willing to suggest them for the serious consideration of the editor and readers of the *Horticulturist*. I may, indeed, still be in the wrong; but if so, how shall I become right unless through the light illuminated by the

editor and able correspondents of the *Horticulturist*. Meantime your readers will allow me to write with the positiveness of one fully convinced in his own mind, even though those convictions may rest on a frail foundation.

My great object will be to prove that the jackknife and handsaw of the nurseryman, are by far the greatest enemies of all fruit trees in this part of the west, and the producers of more hereditary and annual diseases among our fruit trees than all other causes combined. Their mischief is, of course, effected, first, by their use in grafting, and second, by their use in pruning.

In order to set this matter in its true light, it will be necessary to advert to the true PRINCIPLE OF VITALITY AND LONGEVITY in all trees, and to the effects of SOIL and SUN on hereditary DISEASES and DISEASED GROWTH.

1. PRINCIPLES OF VITALITY AND LONGEVITY.—After all that has been said on the subject, I cannot resist the impression that the essential elements of the highest degree of both vital power and of longevity, are placed by nature in the seed, and the seed alone. It alone of all other parts of the tree, contains within itself, in the highest degree of perfection, all parts of the embryo tree, trunk, roots and top; and these, when produced from a healthy seed, have both a vital power and a capacity for lon-

gevity which can never be produced from any other source. By vitality and vital power, I mean tendency to a vigorous and healthy growth, and by power or capacity of longevity, I mean tendency to a protracted continuance of that healthful growth through the longest series of years of which the tree is, in its own nature, capable of living.

The facts which might be adduced in proof of this position, are quite too numerous and too well known to need specification.

The highest power of vitality in a tree itself, produced from the seed, is, usually, at least, the neck of the tree, as some physiologists have called it, or precisely that point where the seed lies when it begins to throw its top upward and its root downward. At this point the tree manifests its vital power by throwing up vigorous suckers or shoots whenever its life is endangered above ground, and often from unknown causes. So much does the vital power of this part of the tree exceed all other parts, that it is a fact well known to root grafters in the west, that one inch of root near this point is as effective for their purpose as twice that length of root remote from this vital point. Hence, too, suckers torn from old trees near this point, manifest a constant tendency to prolong a lacerated and diseased vitality by throwing out roots and throwing up suckers all around it. It is, in fact, an effort of nature to heal a mortal wound, analagous to the fabled story of the serpent's heads of old.

The vital power of the seedling tree diminishes as you recede from this point, both in distance and in growth—both upwards and downwards, and probably its power of longevity too. That is, one inch of root, or a single bud, taken from an old tree, in which the original vital force of the seed is

expanded into long roots and thousands of buds, have each less vital power and less capacity of longevity than the same length of root and the same kind of bud taken from a young tree, the original vital force of whose seed has been expanded only in a few buds and a few roots; and the more intimate their connection with this vital point, the neck of the tree, the greater the vital power, and vice versa. This, in case of the root, is determined mainly by simple distance, and in case of the top, by distance combined with vigor of yearly growth. That any other part of a tree could be forced to exhibit the same laws and the same power of vitality and longevity as the seed does, I cannot believe.

An eminent writer has recently attempted to prove that the bud is as perfect an organ of reproduction as the seed, and that it has in itself all the appropriate elements and organic forces and powers of the seed itself—indeed that it is nothing but a seed “prepared for one set of circumstances,” while the real seed differs from it only by being prepared for different circumstances. Now what proof is there of all this? Why, simply, that a bud can, by art, be made to grow and form a tree. But has it ever been proved that it can, under any circumstances, be made to exhibit the same power of either vitality or longevity as a seed from the same tree? By analagous principles of art, a slip from a man's forehead may be turned down and made to grow into a nose: and yet foreheads are not noses prepared for a “peculiar set of circumstances,” nor yet nature's seed for noses; and if all noses were thus produced by art, it is probable that diseased noses would soon become as common as diseased trees now are. Facts are abundant to prove that the proper natural vital force and power of longevity of a given tree is not found in any bud or scion,

or in any other part of the tree, whatever, but that special part prepared by nature for the express purpose of continuing the vitality and longevity of the species. And there are, also, enough facts to suggest, at least, that this original vital force in the seed diffuses itself with the growth of the tree in the manner above indicated, and to render this view worthy of the careful observation and attention of all naturalists and practical fruit growers. For if these principles be correct, it follows, of course, that every time a seedling tree is divided or mutilated, either in top or root, its natural life is also, all other things being equal, proportionally divided, mutilated or shortened. On these principles, if the top of a tree be wholly cut off, a sprout from the root or neck can possess only a part of the natural vital force or longevity appropriate to that tree: and although obvious considerations will make the new shoot grow more vigorously for a time, it will finally die sooner than the original unharmed tree would have done in its place. But if we take nothing but a scion or a piece of root, or a single bud from a tree, we have only a small part of the original vital force of the seed; and this state is, at this moment, full of facts from one end to the other, to show that the actual longevity is, in all such cases, greatly diminished. The principle here maintained is, that *every time the seedling tree is divided, whether in root or top, its natural longevity and appropriate vital force, derived from the seed, is proportionally divided, abstracted and shortened*; and we fully believe that some of the worst forms of hereditary, and also of annual diseases, flow from a succession of such mutilations through a series of generations, or are produced by an effort of nature to resist and repair this interference with her natural processes, as we shall hereafter show.

In view of these positions, two things should be remembered: first, that there are trees, vines and shrubs, the natural vital force of whose roots, necks or trunks produced from seed, is so great, that they for ages continue to throw up shoots, and thus continue their natural life to so great a length of time, that even if the same general law holds in reference to them, it can never probably be ascertained, or if ascertained, would be of no practical importance. When a shrub, or vine, or tree, has the power of continuing its natural life, or of unfolding the vital force of the original seed by shoots, layers, or otherwise, through hundreds and thousands of years, two things are true: one generation of men do not live long enough to ascertain whether the seedlings of such plants will outlive the cuttings or layers taken from them, though in all probability they would; and second, the shortened and mutilated life is long enough for all practical purposes at least, whatever may be true in theory. It is not only difficult but useless to study the laws of longevity of such plants, as for example are the grape, currant, and many of our forest trees and shrubs. But when the natural life of a valuable seed does not exceed fifty or a hundred years, it becomes of the highest importance to the cultivator to ascertain the laws and principles upon which that life is necessarily diminished and shortened, especially if such shortening is liable to be great, and also attended by incurable hereditary and chronic diseases throughout the entire life of many of the thus mutilated trees.

Suppose, for example, the natural life of the apple seedling one hundred years. Suppose that the most careful grafting or budding into an entire seedling stock still diminishes the natural life to seventy-five years on an average: this, considering the importance of the supposed change, is tole

nable. But suppose that by a further mutilation and division of a seedling root into some twenty pieces, the natural vital power of the original seed is divided into as many parts, giving an average longevity of only twenty years, or even far less than that; this, surely, is intolerable; and yet this intolerable condition of things is the real condition of one half the best apples, and almost all the best pears in this state. A good judge could tell how an orchard fifteen years old, in this state, was propagated and grafted, simply by riding past it. Trees made from buds alone, will die out in large quantities the first five years—those made of slips of root two or three inches long, will be generally gone in fifteen or twenty years, while those put upon larger pieces, or upon the tap-root of a seedling, or upon a sprout from the neck of a vigorous tree, will rarely live over twenty-five years.

Multitudes of apple trees in this vicinity, which have been mutilated and grafted on sprouts and pieces of roots, through several generations of trees, have come into the same state that most of our pears, so treated, have already attained, viz: a condition of either hereditary or chronic disease, which exposes them to perish suddenly, just as the pear does, even when ten or twelve inches through, by what is called the "sun-blight," "frozen sap-blight," &c., &c., and if the same processes of grafting should be continued as long upon the apple as they have been upon the pear, I cannot doubt that it will become as difficult to make our grafted apples live to twenty years of age, as it is now to make our pears live that length of time.

So far as facts have been made public, I should suppose that the practical results of this mutilation in grafting, were developing their true nature more rapidly here than in any other part of the Union, or at least far

more strikingly: and this, too, would be naturally expected; for in a soil so excessively rich as this, all trees come to maturity and decay more rapidly than on a poor soil. This is true of almost all our forest trees. Moreover a rich soil operates to hasten the development of chronic and hereditary diseases in trees, by the same law that high living tends to the same result in the human family. It seems to be a law of universal nature, that plethora and surfeit tend sometimes to produce, that is, to originate disease, while it always tends to hasten the development of all diseased tendencies, while a barely sufficient diet often postpones the fatal hour both in the animal and vegetable world. Starvation also, doubtless, produces the same results as plethora. Hence wrong management and diseased tendencies may be expected to show their final result soonest on the richest and on the poorest soils—that is where there is the greatest and the smallest amount of the appropriate food for a given plant.

In addition to the above considerations respecting the vitality of seeds and the effect of soil, &c., it ought not to be forgotten that nature has appointed a certain equilibrium between the root and the top, and also between the length of the trunk and the top, which cannot be disturbed with impunity. There are certain laws, also, connecting the shape of the top with that of the root, of the greatest importance to the nurseryman—all of which are more or less disturbed and thwarted by the existing absurd modes of grafting and pruning. In my next paper I shall attempt to apply the above principles to the well known blight in the pear and the cherry, in the west, and the present wretched condition of many of our apple orchards.

Respectfully yours, J. B. TURNER.

Illinois College, Feb. 14, 1843.

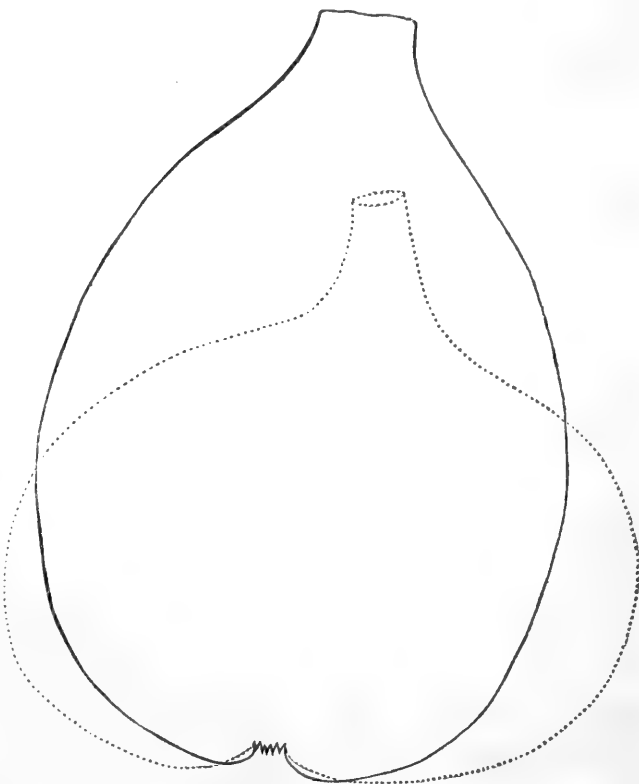
NOTES ON SOUTHERN FRUIT.

BY ROBT CHISHOLM, BEAUFORT, S. C.

DEAR SIR :—Not seeing described in your work on fruits, several that I have, and others that are cultivated in this neighborhood, I have thought some account of them might prove acceptable to you.

I must first mention two or three figs, which are cultivated here, and the merits of which are not, perhaps, known to you. The first of these, I cannot give you the name of with positive certainty, but I believe it is the *Alicante*. It is a most abundant bearer, commencing to ripen its fruit about the 10th to 15th of July, seven to ten days earlier than the white or lemon fig, and continuing, in strong clay lands, to bear abundantly, until a heavy black frost, which usually happens here about the middle of November. I send you a double outline of the fig. The larger outline is the form of the fruit of the *first* crop, but the inner, dotted outline is about the normal form of the fruit generally.

I had three trees of tolerable size of this variety, bearing, for two summers, immediately under my eye, and gathered the fruit almost every morning myself, and never had any doubt about its being a *purple* fig, while some of my friends, who have trees from the same source, pronounced it a *brown* one; but you may see by the shape that it is *purple*. This variety and the *Celestial*, which is as remarkable for its small-

Fig. 54.—The *Alicante* Fig.

ness as this is for the largeness of its size, are certainly the two very best figs that I have eaten.

The *Celestial* comes to us from New Orleans, where it is esteemed the best fig they have. It is brown, and the skin so thin that when fully ripened, which is indicated by its shriveling, and hanging down, it can be eaten without being peeled. The tree grows rather slowly, and neither bears very early

Fig. 55.—*Celestial* Fig.

nor very abundantly; while the Alicante grows also slowly, but in consequence of bearing both very early and abundantly. Both these varieties might, I think, very well be raised further north, in tubs and boxes. I imported a number of varieties from Italy, but saved only one, which proved an acquisition. The fruit is a white variety, small, and looks almost as if made of wax.

The fig is propagated generally by cuttings, which very seldom fail when set in good ground, and at the proper season. This is either in February or August. Cuttings set in August will frequently bear the next spring. It is a common belief among us, that *cuttings* will bear fruit quicker than a tree that is transplanted, but I cannot say whether or not this is the case. The cultivation of the fig is very simple, and consists in merely pruning for shape, and then taking away all suckers, and giving a liberal supply of manure every year, to which some salt may very profitably be added.

I have two trees of the *Corosol of the Antilles*, a fruit, said by C. BAILLY, in his *Manuel du Jardinier*, to be superior to the pine apple. I have had one specimen upon said tree for the past two summers, but unluckily my fowls devoured them.

I have have had, for half a dozen years, the *Fig Kaki*, or *Japan Persimmon*, but as the female tree did not appear to thrive where it was, I removed and lost it, but I have sent to Paris for others. I find the *Jujube* tree getting to be a nuisance in my garden, it suckers so freely. I mean to try hedging with it, as it is more thorny than the Osage orange.

My orange crop, owing to bad seasons, has almost entirely failed the last two years.

There is a very rough-skinned, but not acid-juiced, variety of the lemon, very com-

mon in Beaufort, being much more hardy than the lemon of commerce, but the fruit is of much less value. The *Myrtle-leaved* orange is also quite common, and is more hardy than either the sweet or sour oranges. Also, two kinds of "Forbidden Fruit," the one nearly as large as the oldest India Shaddock, its flesh of a greenish yellow; the other about the size of the sweet orange. The large variety I have, and it has proved more hardy than the common orange, having, under severe frosts, shed only the leaves proper, and not the winged footstalks. The smaller variety is common in Beaufort. The Shaddock, with pink-colored flesh, grows also here. The rind or peel of this, and that of the large Forbidden Fruit, is in much demand in Beaufort, where it is prettily *carved*, and then preserved as sweetmeats for presents. [We have seen specimens of this—certainly the most delicate and fanciful of all preserves.—ED.] A clay sub-soil seems to suit the orange much better than a sandy one. My oranges here, in many seasons, have been of good size, and quite sweet, while those in Beaufort, on a sandy soil, were small, green and quite sour.

I have three or four hundred *olive* trees, most of which are bearing, though they are yet small. They were procured from the neighborhood of Florence. They have not been touched by frosts of previous seasons, though in some cases, so cold that the *leaves* of almost all the orange family were killed.

The summers of 1846–47, have been unfavorable for fruits of all kinds, especially that of '47, for it began to rain about the middle of May, and continued, with *very* few intervals, until nearly the middle of September. I did not have a single peach fit for eating, and my apples were imperfect. Yet some of my pear trees bore abun-

dant crops of fine fruit. *Muscat Robert* bore for the first time, and was loaded. My *English Jargonelle*, (upon the quince stock) a tree of seven inches diameter at a foot from the ground, bore fruit large and perfect of its kind, and fine if not first rate. They were in eating from the middle to the 26th of July. *Golden Beurre of Bilboa*, ripened with me on the 24th of August.

My *St. Germain* trees (two standards and one dwarf) were loaded with large and perfect fruit, (I send you an outline of one of them in this letter.) I will not say that this was the average size, but I had several larger, and one that weighed 1 lb. 1 oz. This, of which I send you the outline, weighed about one pound. [The outline shows a *St. Germain* of common size, 11 inches in circumference the smallest way, and 5 1-2 inches in diameter the longest way.—Ed.] They began to drop from the tree early in October, and have been in eating up to January. The variety, ever since it began to bear, three or four years since, has never failed to bear regularly and abundantly, and keeps later than any late sort I have yet fruited. The *winter Bonchretien* has borne cracked and imperfect fruit the past summer, for the first time since it commenced fruiting with

me. I think the fruit rather better than the *St. Germain*—both are in eating at the same season.

I have one hundred varieties of pears; many of them I have collected from various sources abroad, and have, as yet, seen no description of a part of them. I expect a large number to come into bearing the coming season, if it is a favorable one. I would be glad to send you samples for comparison with the same fruits in your climate.

We are not so much behind the age in the cultivation of fruits as one would be led to suppose, from not seeing any South Carolinian quoted among the Pomologists in your book, though we are much more so than we ought to be. However, a change is rapidly taking place, and we are becoming better farmers, better gardeners, and better planters. A taste for Horticulture is very much on the increase.

I am with respect,

Your ob'd't servant,

ROB'T CHISHOLM.

Palmetto Hall, near Beaufort, S. C., Feb. 1848.

[We shall be glad to hear again from our correspondent, who is one of the most zealous devotees of horticulture among southern planters.—Ed.]

REMARKS ON GARDENING AS A SCIENCE—NO. 8.

BY DR. WM. W. VALK, FLUSHING, L. I.

LIGHT.—In our last article, the question was asked, at its conclusion—"whether, as a general thing, we are not at infinite pains to ventilate our plant houses, with no other or better result than incurring much trouble without any sort of advantage?" The editor correctly supposes that we do not "deny the superior growth and luxuriance of plants in houses heated in the '*Polmaise*' mode." We simply question the necessity

or utility of ventilation, as *usually* practiced. Light is an agent of wonderful power in its effects upon vegetable life; but it is not our purpose to investigate this most mysterious principle, beyond the influence exerted by it upon the organic structure and developments of plants. By Sir ISAAC NEWTON, and the late Sir WM. HERSCHELL, many interesting experiments were made to prove the divisibility or decomposition of

a ray of solar light. They, and others since their time, not only succeeded in proving this, but also made it apparent that different heating powers were possessed by the ray when so divided. It will not be out of the way to notice these briefly.

When a sunbeam is made to pass through a triangular piece of polished glass, called a prism, an oblong image, termed a spectrum, is produced, which displays on a white screen seven primitive colours,—red, orange, yellow, green, blue, indigo, violet. The white sunbeam, as everybody knows, produces a sensation of heat on the hand; yet it communicates no degree of warmth to a piece of glass through which it passes, as, for instance, a burning glass. But, decompose the ray, and it at once exhibits very different degrees of heat; thus,—“on applying a delicate thermometer, it is seen that the blue ray scarcely affects it at all; in the green it rises, and in the red shows an increase of several degrees. Assuming the heating power of the violet ray at 16° , that of the green is 26° , of the red 55° ; but beyond the red ray, and the limits of the visible spectrum, the increase of temperature is still greater.”

These phenomena, though inconclusive, are nevertheless interesting; and they have been rendered more so by the recent observations of Dr. HORNER, of Hull; for these have made it probable that glass of different colours may be of use to the gardener in effecting different objects; thus, blue glass is supposed to favor the first principles of growth, and to assist the germination of seeds, and, by inference, the protrusion of roots from cuttings; while the red, or heating colour, and the brilliant illuminating yellow, are more favorable to the processes of maturation.

The unity of creation, the universality of light, seem to require, and indeed, prove,

that one simple, vivifying principle is, and has been in active operation from the commencement of time. PROFESSOR PLAYFAIR once observed—“If we consider how many different laws seem to regulate the action of impulse, cohesion, elasticity, chemical affinity, crystallization, heat, light, magnetism, electricity, galvanism, the *existence of a principle more general than these*, and connecting *all of them with that of gravitation*, appears highly probable.”

Such was the almost prophetic suggestion of this philosopher. That *the globe* was “*cavernous, replete with light, shining with intense splendor*,” was the presumption of a LESLIE. But if, as we believe the fact to be, *solar light* is the only ethereal essence or matter which pervades all nature, no such cavernous central magazine of it is required; nor need we perplex our minds about the source of effulgence, for the glorious *sun* stands revealed to all; and the life and activity of creation depend upon his beams. View it in any way we please, the command—“*let there be light*,” was the language of power; the fiat gave life to all created things, and there is not one act of progress or increase, of respiration, decomposition, motion, electrical or chemical action, that is not, and ever has been, dependant on it for its commencement, continuation, and completion. Let those who doubt consider the wonderful orb, whose beams have been poured upon the planetary system throughout time; let them, with philosophic eyes, view the mighty phenomena of development and increase that are manifestly the result of his power, and they will find themselves constrained either to admit that *light is absorbed* by the bodies upon which it strikes, or that it becomes extinguished and lost; the latter conclusion would be subversive of the analogy of all nature.

But if the beams of light be absorbed, they must of necessity be masked or concealed, till excited by some powerful agent which disturbs the natural equilibrium; and such disturbance is happening every day and hour, in every act of abrasion, percussion, motion, chemical action, and so forth.

The source of light is the *sun*, whence its diffusion is universal. That mighty orb, being the fountain of pure ethereal light, electrises all bodies, (primary or secondary,) and produces a condition in such bodies which causes them to attract each other, and to be attracted themselves, universally and interchangeably.

We may not be able to withdraw the veil of mystery; but the experiments of Professor FARADAY are quite conclusive of the fact, that a stupendous quantity of electricity combines with the elements of matter, and gives them form and consistence; it retains them in their natural condition and order. 'This electricity is derived from the sun; and, as all light comes from that source, it becomes the *first grand connective principle*.

Light, we have said, pervades, imbues, influences all things. True, we do not perceive it in a drop of water; yet water contains the elements of tremendous combustion. Flint does not manifest light, neither does steel; yet who doubts their excitability by percussion? Hydrogen gas, the lightest of all known airs, is invisible; yet let a stream of it be forced through a fine aperture upon a bit of spongy platinum, the cold metal will become heated and ignite the gas. A piece of glass, and a small square of black silk, are both inert and cold bodies; yet rub them together, they exhibit sparks of ethereal light. A little white sugar, mixed with powdered chlorate of potass, will burst into flame on applying a drop of sulphuric acid. On the same prin-

ciple, our lucifer matches act as excitable media of masked electrical light.

As the principle of solar electric light becomes better understood, the theory of *latent heat* will be forgotten. Philosophers are advancing on the road; but, like the world, they cling to old prejudices. For what Davy and Faraday have effected and improved, we may be thankful; but we are far from the *simplicity* of science.

Light, as applied to plants endowed with vitality, is an active principle; they drink it in, and colour is imparted to their foliage and flowers; but it is a mistake to imagine that the direct ray is always essential; for diffused light acts perfectly well on many vegetables; and even in a dark cellar, a rhubarb plant exhibits gorgeous tints of red and yellow. The air itself is replete with lights, and this medium cannot be excluded.

Inert vegetable matters, void of life, as straw, haulm, dry wood, are vehicles of this mighty principle, which require only a spark, or even friction duly applied, to raise it into activity. They there burst into rapid combustion, and produce substances, the existence of which could be no more suspected by the ignorant, than was the light which blazed from a dark mass of lamp-black, excited to spontaneous combustion (as it is *improperly* termed,) by electro-chemical agency.

Light, it appears, is to vegetables the stimulus of the vital principle; its operation during the day effects the elaboration of the elements of water and carbon, producing the specific essences of the individual species. It is the chief agent of maturation, as well as of colour; its absence during night, and in winter, produces torpor; and *repose* is as essential to plants as to animals. Plants, made the subject of experiment, are always placed in artificial situations; therefore, we cannot trace the direct agency of

light with precision ; still, from the observation of natural phenomena, we may reasonably conclude, that every material alteration or change in their fluids is chemical ; if chemical, it must be electrical ; and if electrical, we are inevitably led to the primary fountain of light. Thus all is harmony, and all referable to *one* great principle—the sun !

Electricity has been thus prominently alluded to as an agent of unsuspected, yet wonderful power in vegetable organization and growth. “All decompositions and new combinations, all changes of condition, from the solid to the liquid, from the liquid to the gaseous, from this latter back again to the liquid, and so forth, are invariably and necessarily attended with a disturbance of the general electric repose.” But the gardener starts in amazement, and exclaims,—“What have I to do with electricity or electric disturbances ?” The question may be fairly asked, because he *sees* nothing which can convince *the eye* ; but when the *mind* contemplates the fact, that every act of friction and percussion induces a chemical action, however slight, which reveals a corresponding quantity of electricity, then the gardener will perceive, that in every one of his operations by the spade, fork, garden-trowel,—his mixing soils, manures, composts, potting, re-dressing, or even stirring the surface of his pots,—he disturbs the condition of his ground, brings fresh matters and substances into contact, and thus promotes the decomposition of water, and of hydro-carbonous materials, and produces an equivalent stream of electricity, which conveys the nutritive, newly formed fluids, into the absorbent vessels of the roots.

The really intelligent man will not condemn what at first he may not fully understand ; the rather will he desire to know more, although, to him, the subject requires the plainest elucidation. We would have gardeners *thinking* men, something better than mere diggers of the ground :

—“Strength may wield the ponderous spade,
May turn the clod, and wheel the compost home ;
But elegance, chief grace the garden shows,
And most attractive, is the fair result of thought.”

The horticulturist should know that every portion of soil contains decomposable substances, which contain the *elements of water*, (oxygen and hydrogen,) in the proportions to form water, united with a determinate quantity of *carbon*, (the base of charcoal.) These elements are held together by definite quantities of the electric principle, the source of which is the sun. In culture, this electricity becomes disturbed, and the particles deranged ; they change their position, and become re-united under various solid, liquid, and gaseous forms,—all and each again combined with appropriate, equivalent proportions of the all pervading ethereal fluid. We may not, certainly, be able to ascertain minutiae, or even to acquire the credence of doubters ; but certain it is—so much *has* been demonstrated by experiment—that there can be no hesitation to challenge the whole world of antagonists to disprove it, or afford a rational ground for disbelief. The light has dawned upon our ignorance, and darkness is giving place to the luminous facts which are revealed. The “royal road of scientific discovery” is before all who will travel it ; and he is but a laggard who fears to take the journey. WM. W. VALK.

Flushing, L. I., Jan. 7, 1848.

POMOLOGICAL NOTES.

BY A FRUIT GROWER AT WORCESTER, MASS.

[THE following notes, though anonymous, are, as we can assure our readers, from one of the most careful and judicious cultivators in New-England. Ed.]

There are a few varieties of pears, among a considerable number that I have had the opportunity of testing, of the merits of which I think some cultivators, at least, are not well informed. I offer the results of my experience, in relation to them, for what it is worth. If my views are correct, it may be of advantage to some one; if not, it may open the way for those who have had better means of judging, to correct my errors.

BEURRE D'AMALIS.—A large, handsome, and very good pear. It has been called first rate. I should call it good second rate; but it has so many good qualities as to make it valuable, especially for market cultivation. The tree is a good grower, and a remarkably free bearer on alternate years, and has the recommendation—no small one, by the way—of perfecting its fruit, however full it may bear. It is very juicy and good flavored, and is much improved by ripening in the house. It comes immediately before the Bartlett.

ROSTIEZER.—The best summer pear I have yet seen,—superior even to Dearborn's Seedling. The tree makes a clean, strong and beautiful growth. Wood dark olive, nearly as dark as the Rousselet de Rheims. Foliage large. It gives promise of being an early and free bearer. Fruit finely formed, fair and handsome, a little under medium size, very juicy, with a fine aromatic flavor. It ripens here the latter part of August, between the Bloodgood and Dearborn's Seedling.

DOYENNE BOUSSOUCK.—After four years acquaintance with this pear, I consider it decidedly one of the greatest of our recent acquisitions in pomology. Tree of tolerably vigorous growth, and a great and constant bearer. Fruit large; in form, considerably resembling the *White Doyenné* or St. Michael, light green, becoming a bright lemon yellow, sometimes with a slightly red cheek. Surface somewhat uneven, like the Duchesse d'Angouleme. Flesh rather coarse, but very juicy, buttery and good flavored. Specimens have been repeatedly shown at our horticultural exhibition, where they were generally supposed to be the St. Michael, brought to extra size by high cultivation. In quality, it approximates very near that kind, but is distinguished from it by its more uneven surface, its stouter stem, rather coarser grain, and greater size. The leaf is broader, with a shorter petiole. This tree was imported from France by Wm. Kenrick, in 1841.

GLOUT MORCEAU.—My pears of this variety, the last season, were magnificent in size, and delicious in quality. I think it a much superior pear to the Beurre d'Aremberg, with which the French seem to have confounded it. The only objection ever made to it has been its tendency, sometimes, not to perfect itself. This, I think, is owing either to deficient cultivation or to indulging it in its strong propensity to overbear. Giving this objection all the weight it is entitled to, it is still a most valuable kind, well worth some extra pains to bring it to perfection. This, I think, may be done by generous treatment, especially by the use of *bone dust* about the roots, and by removing

the poorer half of the fruit in seasons when it bears most freely. Quince stocks are rather preferable to pear, for this kind.

SURPASSE VIRGALIEU.—I am surprised that this variety is not more known and cultivated than it appears to be. It is one of the most uniformly productive kinds, and comes into bearing very young. It is of medium size, buttery, high flavored and excellent. It should be in every good collection.

PARADISE D'AUTOMNE.—This has been said to resemble the *Beurre Bosc*, and some have even expressed doubts whether they were not identical. The only resemblance I have been able to find, more than exists between other good varieties, is, that they are both russet fruits, and both of the very first quality. They differ considerably in form; the Paradise is more sprightly than the Bosc, with a different flavor. The Bosc is but moderately vigorous in its growth, while the Paradise is one of the most thrifty and strong growing of all pears. It promises also to be very productive.

ST. GHISLAIN.—This deserves a higher

reputation than it has attained. It has been said to be somewhat variable, and not of uniformly good quality. I apprehend this is owing to its being allowed to hang too long upon the tree. When seasonably gathered and ripened in the house, I have found it to be uniformly fine. It is a beautiful grower, upright and handsome in form, and a free bearer. But it does not bear so early as many other kinds, and may, consequently, be expected to endure longer.

LAWRENCE.—I have fruited this pear one season, and am much pleased with it. It is destined to be a standard variety, nearly, if not quite, equal in quality to the old St. Germain, and of a much more vigorous character.

PEACH PLUM.—This plum has been known in this vicinity some twenty years or more. It is very early, ripening sometimes in July, larger than the Washington, and very handsome. It sells readily in Boston market for 75 cents a dozen. The quality is very good. It is *not* a good bearer.

Worcester, Mass., March, 1843.

NOTES ON PROPAGATING BY CUTTINGS.

BY PROFESSOR LINDLEY.

WHAT is required when cuttings of plants are to be struck, is a due adjustment of heat, light, and moisture. The first stimulates the vital process; the second causes the formation of matter, out of which roots and leaves are to be organized; the third is at once a vehicle for the food required by the cutting, and a part of it. The great difficulty is to know how to adjust these agents.

If the heat is too high, organs are formed faster than they can be solidified; if too low decay comes on before the reproductive

forces can be put in action. When light is too powerful, the fluid contents of the cutting are lost faster than they can be supplied; when too feeble, there is not a sufficiently quick formation of organisable matter to construct the new roots and leaves with. If water is deficient, the cutting is starved; if over abundant, it rots.

It is, then, the adjustment of these varying forces to the peculiar nature of the cutting to be acted upon, that constitutes the art of propagation. It is this which theory cannot supply, but which depends upon skill

and experience. If any part of the operations of cultivation can be called empirical it is this. And yet the operator is not without rules to guide him in this adjustment; the misfortune is, that they are too general.

The softer a cutting, the quicker must be the excitement and application of the formative process, the more light, the smaller the quantity of water. The more hard and woody a cutting, the slower will be the operation, the more feeble the light, the greater the quantity of water. If these conditions of new growth can but be preserved, all cuttings of all plants may be converted into new individuals.

The great enemies of the propagator, says Mr. Neumann, are rotting and drying; for this reason cuttings are preserved in the midst of a temperature and humidity always equal, the evaporation of the soil is hindered, and the perspiration of the cuttings is prevented.

Heat, light and moisture being thus shown to be the agents to whose assistance we must look for success, and by whose mismanagement the hopes of the gardener are ruined, it is of the first importance to determine how each can be best and most efficiently controlled.

And first of heat.

We know that plants are distributed over all parts of the habitable globe; that in neighboring countries the species are nearly alike, that distant countries are clothed with vegetation of entirely different kinds, and that the distinction in the vegetation is in proportion to the distance of the countries from each other. There is not, perhaps, a dozen species in Normandy that do not grow wild on this side of the Channel; there is not a dozen species common to England and Bengal. Species, in fact, are in general limited by similarity of temperature, and cannot exist beyond such limits. One of the

first considerations for the propagator, therefore, is what amount of heat is natural to a species during its season of growth. With less than that it is hopeless to make cuttings grow. It is only when plants strike freely that the natural amount of heat is sufficient; in general they require more. The amount of heat found in their natural climate may be enough for them to grow in; but a greater degree of excitement, by means of a higher temperature, will be demanded by them to strike root in, when cut up into the fragments called cuttings. A Willow cutting stuck into the open ground will strike root, but it does so much faster and more vigorously if placed in a hotbed. A White-thorn cutting in the open ground will not root at all; in a warm propagating house, it will do so readily: and to reverse the illustration, cuttings of tropical plants, which naturally enjoy a very high temperature, will perish if it is reduced, and will only put forth roots when it is raised considerably above their natural standard. Thus Mr. Neumann mentions that Nutmegs, Guaiacum, Mangoes, &c., will not succeed unless in a temperature of about 100° Fah. That degree of heat, again, would be fatal to green-house plants.

But it is not the temperature of the atmosphere that requires to be maintained above that to which plants are naturally subject: it is the soil that must be warmed. The first object is to obtain roots; those organs once formed, leaves will follow. The vital action which causes the production of roots is, in the first instance, local; roots are produced by the development of the cellular matter of the underground part; that cellular matter requires to be stimulated by unusual warmth; but the necessary stimulus cannot be communicated by a heated atmosphere: it is the warmth of the soil in which the cellular matter lies buried that

most be secured. Unusual warmth of the air would have the effect of stimulating the buds, and would cause a premature appearance of leaves, which would be anything rather than conducive to the success of a cutting. If soil were to be kept at 33°, and the air at 84°, leaves would form, but no roots would be emitted under ground, however skilful the operator; and then, unless roots were thrown out above ground the cuttings would speedily exhaust themselves. On the other hand, if the soil were kept at 84°, and the air at 33°, leaves would certainly be formed as soon as the roots had struck out, although in a pinched and shivering condition.

A proper degree of *bottom-heat*, then, is the first point for consideration, for all other processes are subservient to that fundamental requisite; and the rule is, that it should always be higher by several degrees than that to which plants are naturally subject. Unfortunately, we have very little evidence to show what that is; but a rough estimate of it may be formed by regarding it to equal the mean temperature of the summer: hence the great value of good meteorological observations to gardeners. Suppose, for example, that it is required to strike a cutting of some plant from Algiers, and that

the mean temperature of the summer there were 70°—which is, we believe, about the truth—the safe course for the gardener to take would be, to plunge his cutting in soil warmed up to 75°.

It is very much to be regretted that no one should have as yet compiled a set of meteorological tables for the use of gardeners. They would be invaluable; and we live in hope that some public body will, ere long, take up the subject. Scattered through books, there is a vast quantity of evidence which, although imperfect, is of great value, but nobody knows where to look for it when it is wanted. If such a work were once compiled, evidence would quickly accumulate, for inquirers would learn what to observe. With that evidence, gardening would assume more and more the condition of a science; for there is no doubt a correct knowledge of the heat, light, and moisture of different climates is, next after the laws of vegetable physiology, the surest guide to successful cultivation.—*Gardener's Chron.*

[Amateurs who find it difficult to propagate certain *stubborn* kinds of hardy trees and shrubs, may obviate the difficulty by planting them at this season, in a *hot-bed*, properly shaded and ventilated, instead of a common shaded border.—ED.]

THE CULTIVATION OF THE FILBERT.

[FROM THE LONDON HORT. MAGAZINE.]

[FILBERTS are grown with ease in any suitable soil in the northern states; and we commend to such of our readers as wish to attempt their cultivation, the following excellent advice. ED.]

It is not generally known, except to professional gardeners—or, if known, the knowledge is seldom acted on—that a filbert tree

may be rendered productive in almost as small a space as is occupied by an ordinary gooseberry or currant bush. In fact, under favorable circumstances, the produce of these neat bushes is astonishing. We propose, therefore, to explain this mode of cultivating the filbert; and in doing so shall avail ourselves of some excellent directions

by the Rev. W. Williamson, published in one of the early volumes of the *Transactions of the Horticultural Society*.

The first consideration in making a plantation, is to select a proper soil; for if that be not congenial to the constitution of the plants, we cannot expect any great success. The soil in which the filbert is found to flourish best, is a hazel loam of some depth, with a dry subsoil. If the subsoil be too retentive of moisture, the trees are apt to run too much to wood, without throwing out those short twigs upon which the fruit is generally produced. In that part of Kent which is famous for the cultivation of the filbert, the soil is loam upon a dry sandy rock. It may be taken as a general rule, that soil which is proper for the growth of hops, is also congenial to the filbert.

The filbert requires a considerable quantity of manure; the grounds in Kent are dressed every year, or at least once in two years. Every kind of manure is beneficial; but old woollen rags are found to produce the greatest effect.

There are four methods of raising the plants; by suckers, layers, grafting, and sowing the nuts. Each may be practiced according to the peculiar object of the cultivator; but the best method is by suckers; they come sooner into bearing, and make stronger plants than either layers or grafts. They are taken from the parent plant generally in the autumn, and planted in nursery beds, (being first shortened to ten or twelve inches,) where they remain three or four years. They are slightly pruned every year, in order to form strong lateral shoots, the number of which varies from four to six. The most free growing plants are obtained by sowing the nuts; but they are so long in coming to a productive state, and are, besides, so much inclined to degenerate into inferior varieties, that this method

should not be resorted to in making a permanent plantation. The plants raised by layering and grafting are of more humble growth, and therefore better adapted for small gardens where economy of space is made an object.

The method of pruning the filbert being different from that of every other tree, and not generally practiced, a particular explanation of it will be necessary. Mr. Williamson has done this so clearly, that we cannot do better than quote his words, which follow: Before any one can possibly prune a tree with propriety, it is necessary that he perfectly understand the mode of its fructification. The fruit of the vine is produced only upon shoots of the preceding year; cherries are grown chiefly upon short spurs emitted from the sides of the larger branches; if, therefore, the last year's shoots of the vine, or the spurs of the cherry tree, are destroyed, there can be no fruit. Now, in some respects, the filbert is similar in its fructification to both these trees; the bearing branches being *always* those of the preceding year, similar to the vine, and these branches, if the tree be properly pruned, might with great propriety be called spurs, allowing for the difference between the filbert and the cherry; these short twigs or spurs are not more than a few inches long, every bud of which, in a good year, produces fruit. The great object of the following method of pruning is to cause the trees to throw out these spurs in great abundance; and when they are got to a proper bearing state, more than sufficient will be produced. But though it is the usual practice to plant the suckers in nursery beds, I would advise every one to plant them where they are to remain, whether they are intended for a garden or a larger plantation: and after being suffered to grow without restraint for three or four years, to cut them down within

a few inches of the ground. From the remaining part, if the trees are well rooted in the soil, five or six strong shoots will be produced. Whichever method is practiced, the subsequent treatment of the trees will be exactly the same. In the second year after cutting down, these shoots are shortened; generally one-third is taken off. If very weak, I would advise that the trees be quite cut down a second time, as in the previous spring: but it would be much better not to cut them down until the trees give evident tokens of their being able to produce shoots of sufficient strength. When they are thus shortened, that they may appear regular, let a small hoop be placed within the branches, to which the shoots are to be fastened at equal distances; by this practice, two considerable advantages will be gained; the trees will grow more regular, and the middle will be kept hollow, so as to admit the influence of the sun and air; but this, in a large plantation, would be almost impossible, nor indeed is it necessary, though in private gardens, where regularity and neatness are almost essential, it ought to be practiced. In the third year, a shoot will spring from each bud; these must be suffered to grow till the following autumn, or fourth year, when they are to be cut off close to the original stem, and the leading shoot of the last year shortened two-thirds. In the fifth year several small shoots will arise from the base of the side branches which were cut off the preceding year; these are produced from small buds, and would not have been emitted, had not the branch on which they were situated been shortened, the whole nourishment being carried to the upper part of the branch. It is from these shoots that fruit is to be expected. These productive shoots will in a few years become very numerous, and many of them must be taken off, particu-

larly the strongest, in order to encourage the production of the smaller ones; for those of the former year become so exhausted, that they generally decay; but whether decayed or not, they are always cut out by the pruner, and a fresh supply must therefore be provided, to produce the fruit in the succeeding year. The leading shoot is every year to be shortened two-thirds, or more, should the tree be weak, and the whole height of the branches must not be suffered to exceed six feet. Every shoot that is left to produce fruit, should also be tipped, which prevents the tree being exhausted in making wood at the end of the branch.

The filbert is a monœcious plant, and consequently produces the male and female blossoms separately on the same tree; the slender scarlet filaments which are seen issuing from the end of the buds early in the spring, are the female, or productive blossoms; the barren, or male blossoms, are formed on long cylindrical catkins, which fall off as soon as they have performed their office; in pruning, care must be taken to leave a due supply of these to fructify the female blossoms, or our previous trouble will be entirely useless; this may be done without difficulty, for they are perfectly visible at the time of the pruning.

The method of pruning above detailed might in a few words be called a system of spurring, by which bearing shoots are produced which otherwise would have had no existence. It frequently happens that a strong shoot springs from the root; and should any of the first year's or leading branches be decayed, or become unproductive of bearing wood, it will be advisable to cut that entirely away, and suffer the new shoot to supply its place, which afterwards is to be treated in the same manner as is recommended for the others. Old trees are easily induced to bear in this man-

ner, by selecting a sufficient number of the main branches, and then cutting the side shoots off nearly close, excepting any should be so situated as not to interfere with the others, and there should be no main branch directed to that particular part. It will, however, be two or three years before the full effect will be produced.

But though this method of cultivation has long been celebrated, yet it does not appear to me so particularly successful as to deserve the encomiums which have been bestowed upon it; for though thirty hundred weight per acre have been grown in particular grounds, and in particular years, yet twenty hundred weight is considered a large crop, and rather more than half that quantity may be called a more usual one; and even then, the crop totally fails three years out of five; so that the annual average quantity cannot be reckoned at more than five hundred weight per acre.

When I reflected upon the reason of the failure happening so often as three years out of five, it occurred to me, that possibly it might arise from the excessive productiveness of the other two, the whole nourishment of the trees being expended in the production of the fruit; and that, consequently, they might be unable properly to mature the blossom for the following year. We know that peach and nectarine trees may be so pruned, as to force them to bear a superabundant quantity of fruit in some one year; but we find that a regular crop in succession is thereby prevented, and that too for several years. In order to ensure fruit every year, I have usually left a large proportion of those shoots, which, from their strength, I suspected would not be so productive of blossom buds, as the shorter ones; leaving them more in a state of nature than is commonly done; not pruning them so closely as to weaken the

trees by excessive bearing, nor leaving them so entirely to their natural growth, as to cause their annual productiveness to be destroyed by a superfluity of wood. These shoots, in the spring of the year, I have usually shortened to a blossom bud, for the reason before given. The great art of pruning is to produce the greatest quantity of fruit without injury to the crop of the succeeding year, which, in my opinion, is not done by the Kentish method. But by observing the rule which I have laid down, though the trees do not perhaps bear so great a weight in any one year, as by the method before detailed; yet the crops in the whole certainly are not less; with this great advantage both to the public and private grower, that a moderate but regular crop is ensured in every successive year. I think that by this plan the average weight in the whole will be greater. In the year 1819, which was a very productive one, I grew two hundred weight of filberts, (weighed when gathered,) upon fifty-seven trees, the greater part of which were not above six years old, (reckoning from the time of their being cut down,) and growing upon three hundred and sixty square yards of ground; which is after the rate of twenty-seven hundred weight per acre, and upon part of the ground ten more trees are now planted, which, if they had come to a bearing state, would have increased the quantity to more than is considered as an extraordinary crop, besides having grown upon the older trees a moderate but regular quantity for several years preceding.

When the trees are grown on this plan, it is necessary, in order to strengthen the tree as much as possible, to eradicate the suckers from the root; this is effected by exposing the roots, to a moderate distance from the stem, to the frosts of winter, and

the necessary excavation is in the spring filled with manure.

As filberts are several years in coming to perfection, it is usual to plant hops, standard apples, and cherries, among them, and when they come to a bearing state, the hops are destroyed, and the fruit trees suffered to remain. The ground is then planted with

gooseberries, currants, &c., and an under crop of vegetables is likewise frequently obtained. If this were not practiced, the crop of filberts alone, except in particular years, would not defray the expense. The distance at which filberts are planted must depend upon their being mixed with other fruit.

CULTURE OF VINES IN POTS.

BY JAMES DOUGALL, CANADA WEST.

IN the Horticultural Register for 1831, '32 and '33, conducted by Messrs. PAXTON and HARRISON, I find a number of articles on the culture of vines in pots, by GEORGE STAFFORD, gardener at Willersley Castle, Derbyshire, who appears to be the first person who brought this mode of culture to perfection.

As I have not seen any articles on this subject in the Horticulturist, and as few of your readers, probably, have seen the original ones, I have thought that it might be interesting to them, to have the several communications condensed into one short article.

I think this mode of culture deserving of a fair trial in this country, as many persons, who would not feel able to build a vinery, might, in my opinion, grow vines in pots to great perfection, under common hot-bed sashes.

Mr. PAXTON (an authority none will doubt,) says—"Mr. STAFFORD is a practical gardener of the first order, and one of the best grape growers we are acquainted with; he furnishes Mr. Arkwright's table with grapes nearly all the year round, and that, in superabundance. His plan of treating them in pots, is deserving the attention of every person who has a hot-house, or is like-

ly to erect one; for it is an astonishing fact, that he can produce nearly as great a weight of fruit as the weight of the soil in which the plant grows; this has repeatedly come under our own observation; we can, therefore, speak of the surprising crops he produces in this way, equally as well swelled, and much better flavored, than when trained up the rafters. Indeed, the best swelled and best coloured bunches of the *Grizley Frontignac*, we ever saw, were grown in a pot by Mr. Stafford. Although he recommends the smaller and more delicate sorts, he sometimes cultivates the larger; and these are equally well grown and beautiful. We saw on one of his plants in pots, two years old, 37 bunches, all well swelled and ripe; and he has, at this present time, some of his plants nearly as prolific."

Mr. STAFFORD used pots 13 inches wide at top, half that width at bottom, and 15 inches deep. The compost was merely a light vegetable soil, composed of decayed refuse of the garden. He advises growing the kinds naturally prolific, such as *Black* and *White Cluster*, *Black* and *White Muscadine*, *White Sweetwater*, *White*, *Red*, and *Grizley Frontignac*, *Black Hamburgh*, and *Black Constantia*.

He examined the vines as often as twice

a day, and gave water whenever requisite; as a strong, healthy, young vine will require much more water than a weak one. He never used liquid manure, except in a diluted state, and then seldom.

In one of his communications he says—"I took in May, by way of experiment, 6 small plants, which I turned out of two-quart pots, and potted them in the size already described. I then cut them down to three eyes, and placed them in the front of the vinery. I trained one shoot up the middle of each light, to the length of five feet; and during the summer paid particular attention in assisting them with the three principal elements, viz., air, water, and light. After they had grown to the length of five feet and their extremities were stopped, they made efforts to grow again; however, I kept them constantly stopped: this caused the sap to enter the auxiliary shoots, or those produced at the base of each leaf on the main stem, which were allowed to grow, occasionally stopping them through the season. Indeed, I gave them the same treatment as vines in houses generally receive. In autumn, the plants were placed in the open air, and the roots protected from frost."

"On the 2d of January, these 6 plants were placed in a house of about the temperature of 60 degrees Fah., when in a short time they broke, showing fruit at every eye, some two, three, or even four bunches each, being on an average of about 40 bunches on each plant, or 240 collectively; and what is more surprising, the shoots are what every person acquainted with vines would term weak,—being, in fact, little thicker than a good quill, towards the base of the stem, and not more than twice that thickness at their extremities.

"A great portion of the fertility may be attributed to the proper supply of water.

For this purpose, a feeder is kept under each pot; as I am confident every plant so situated is benefitted by capillary attraction.

"Whoever attempts to propagate the vine by cuttings, should make choice of such shoots as are on the most productive part of the vine; otherwise, the plants will be unproductive; for a person may collect either fruitful or unfruitful cuttings from the same plant."



Fig. 56.—A Black Hamburgh Vine grown in a Pot.

"Vines in pots will grow in a common hot-bed frame with good success, I have little doubt, provided the plants are properly prepared. I have now, March 18th, nine pots with small plants, the whole of which could be placed in a common three light frame. The average number of bunches is 40 on each vine; in all, 360 perfectly good bunches. By a judicious arrangement of their stems, and attending to the supply

of water and air, and a regular heat by linings, they will no doubt bear good crops. The Black Hamburg would do for this purpose; but owing to the dimensions of the leaves, it is not so suitable as some others."

"I have now plants making as strong wood as any on the rafters, which have been subjected to pot culture for the last twelve years. The plan more to be recommended, is to give each plant an alternate year of preparation.

"I do not shift bearing plants every year, and never re-pot a plant as long as it is inclined to produce fruit. When it fails, I cut it down, reducing the root to a ball of about nine inches in diameter, and put it deep in the same pot. My vines have usually from eighteen to twenty-four buds in the length of five feet."

Though Mr. Stafford directs that the vines

should be placed in the vinery during the preparatory stages of growth, there is no doubt but in this climate they would perfect their growth, and fully ripen their wood, for the two years previous to fruiting, in the open air, by protecting the pots with moss from the drying effects of the sun and wind.

The growth of the vines in pots could also easily be retarded till the sashes from the hot-beds could be spared, which would be about the first of May, when they could be used to cover the vines without the use of any artificial heat; while for early forcing, I think vines in pots would be more suitable than those planted in the border. I intend trying the culture of the vine this way, and will give you an account of the result.

JAMES DOUGALL.

Rosebank, near Amherstburg, C. W., Feb. 18, 1848.

VALUABLE NEW VEGETABLES.

FROM among the numerous new vegetables which make their appearance in the catalogues of the seedsmen, we are able to recommend strongly, from experimental knowledge, or personal observation of their value, the following, as well worthy of cultivation by every one who values the products of the kitchen garden.

WALCHEREN CAULIFLOWER.—This new German cauliflower is a great acquisition; being more vigorous, hardy, and better adapted to our climate, than any of the old varieties that we have cultivated. The heads are large, and the flavor is most excellent. There are two varieties; the *Early Walcheren* and the *Late Walcheren*. The seeds of the latter, when this vegetable is wanted for winter use, should be planted in May, and the plants transplanted in June,

for future growth. We have had a supply of this truly delicious vegetable for our table *all the past winter*. Our mode was this: We made a plantation of the *Late Walcheren* in good soil, about the middle of June. These plants grew and attained nearly their full size, but did not come into flower at the approach of severe frost. As soon as this period arrived—about the first of November—we had them all taken up, with a little earth about the roots of each, and removed to the cellar of an outbuilding, which was free from frost. There they were replanted, by barely covering the roots with earth,—the larger part of their leaves being left on the plants. In the course of a fortnight, the strongest ones formed fine flower-heads; and, gradually, the others all blossomed and became fit for

the table; and certainly, no vegetable in winter can be compared with them.*

It may be remarked, that any late cauliflower may be treated in this way; but we have never found any to flower so uniformly, or to have so delicate and succulent a flavor in winter as the *Walcheren*.

The EARLY and LATE WALCHEREN BROCCOLI are also very superior, hardy new varieties of this excellent and too little cultivated vegetable. They may be grown in soils where the cauliflower does not succeed.

The PORTUGAL CABBAGE,—(*Couve tronchuda*.) noticed in our first volume, is one of the most delicious of all the cabbage tribe. It is, as yet, scarcely known or cultivated in this country, but needs only to be seen and tasted to become universally popular. Even the stout leaf-stalks, when boiled, are nearly as good as sea-kale. But the heart is the part chiefly used; and cooked in the same way, is nearly or quite as delicate as the best cauliflower, having none of the coarseness and strong flavor of the cabbage tribe. It may, like the cabbage, be grown as an early or a late vegetable; but it is most valuable when sown in May, and kept for use during the autumn and winter. There are two varieties; one large, and the other dwarf. The former, (the only one, we believe, yet introduced,) grows large, and the plants should be set three or four feet apart. The latter takes much less space, and is said to be superior in flavor.

BASSANO BEET.—Certainly the earliest, sweetest, most tender and delicate of all beets. We have cultivated it for three or four years; and last year, planted it for trial in the same soil with half a dozen of the most noted early varieties, and found it to exceed, in earliness and flavor, all others. The root is oval, (long-turnip rooted,) in

colour a pale red, and it is fit for use ten days sooner than the Early Blood Beet.

TURTLE SOUP BEAN.—We received for trial, last spring, a package of dwarf beans, bearing this name, from Messrs. THORBURN & Co., New-York. It proved to be the best *snap*, or *string-bean* that we have yet cultivated—as a general crop for family use. Its superiority over the ordinary bush-beans consists in the tenderness and excellent flavor of its pods, and the long time which they continue fit for use,—certainly three times as long as those of the common dwarf beans. Where only one variety of dwarf bean is cultivated, we would recommend this variety as decidedly preferable to the old sorts; and it bears abundant crops on dry soils, where several others fail. It is said to have its name from the superior flavor of the ripened beans in soup. We have not used them in this way, and cannot therefore speak on this point.

WAITE'S QUEEN OF DWARF PEA.—This is, just now, the favorite *very early* pea in England; and we observe that it is advertised by the leading seedsmen in this country. From a small quantity, grown last season, we should think it likely to prove deserving of its foreign reputation.

The CEDO NULLI PEA is still our favorite, as the best and earliest dwarf pea yet well known and proved in this country. It bears abundant crops, requires very little space, is fit for gathering several days before the Early Frame, and is of excellent quality.

DARLING'S EARLY SWEET CORN.—Those who know, experimentally, how superior the *sweet corn* is in a green state to all others, for table use, will be glad to know that this variety, (originated by the late Judge DARLING of Conn.) will enable them to have it upon their tables long before the

* The cellar was aired freely on all fine, mild days.

common sweet corn is fit to pluck. It is, indeed, one of the very earliest kinds of maize, and should be cultivated in every kitchen garden.

Some of our readers will be glad to learn where these seeds may be had genuine. The Portugal cabbage is, we believe, for

sale by BRECK & Co., seedsmen, Boston; the early sweet corn at the AGRICULTURAL WAREHOUSE, 10 Green-street, Albany, and the other vegetables at THORBURN & Co.'s, New-York; and they may also, no doubt, be obtained of various other seedsmen in the larger cities.

PROFITS OF FRUIT GROWING—NO. 2.

BY B. G. BOSWELL, PHILADELPHIA.

WHEN so many farmers are complaining of small profits, we think it proper to say a little more on the profits of fruit growing.

CHARLES DUBOIS, of Fishkill landing, Dutchess county, N. Y., has taken thirty-three dollars for the fruit grown on one Frost Gage Plum Tree in one season; and last season received ninety dollars for the crop of apricots from one tree.

A lady of Kensington, Pa., has received seventy dollars in a season from one apricot tree.

A gardener, near Boston, has produced eight thousand quarts of strawberries to the acre, and received twenty cents per quart for them,—thus realising sixteen hundred dollars per acre.

An acre of raspberries on Long Island has produced nine hundred dollars worth of fruit in a season. The expense of cultivating, picking the fruit, and taking it to market was one hundred and fifty-seven dollars,—leaving a handsome nett profit of seven hundred and forty-three dollars; a larger sum than thousands of farmers realise from a farm of an hundred acres.

Mr. ZIEBER of Reading, Pa., has made forty-two gallons of pure grape juice wine from one Isabella vine in a season, worth, when one year old, one dollar and fifty cents per gallon—or sixty-three dollars;

being the interest on one thousand and fifty dollars.

An apple orchard of one acre, principally of the Rhode Island Greening, in Wayne county, N. Y., produced two hundred barrels of selected fruit in 1847. Another orchard, of three and one-half acres, produced six hundred and fifty barrels. Although the fruit was sold at extremely low prices—being so far in the interior of New-York—yet the nett proceeds were one hundred dollars per acre. In the vicinity of Philadelphia, such a crop of fruit would have paid a nett profit of three hundred dollars per acre.

JOHN G. GARDNER of Nantucket, Mass., has produced the cultivated cranberry three hundred and twenty bushels to the acre, and found ready sale at four dollars per bushel; thus realising twelve hundred and eighty dollars per acre.

Many persons will say—"Well, large profits may be obtained on a small scale, but nothing can be done on a large scale."

We happen, just now, to think of some large operations in fruit culture. Major REYBOLD, of Delaware, together with his sons and sons-in-law, own a number of farms, and have about a thousand acres in peach orchards. They think nothing of sending five thousand baskets of peaches

to market per day, for some weeks, and are supposed to have realised, last season, forty thousand dollars clear of all expenses.

ROBERT L. PELL of Pelham, Ulster county, N. Y., is known to have raised, for several years past, four thousand barrels of Newtown Pippin Apples per year; and what he chooses to sell in New-York city, will always command six dollars per barrel. Those he sends to London have sometimes sold [at retail] as high as twenty-one dollars per barrel. Last season Mr. PELL's crop was ten thousand barrels.* Suppose, for argument's sake, that one-third of this amount is swallowed up in expenses, there is still left the handsome sum of forty thousand dollars.

Dr. R. T. UNDERHILL, of New-York, has a vineyard of twenty acres of Isabella and Catawba grape vines at Croton Point, on the Hudson river. It is a well known fact, that some thousands of baskets of grapes,

from this vineyard, are annually sent to New-York, and find ready sale at nine dollars per hundred pounds.

The doctor says there ought to be started a hundred vineyards immediately as large as his; and we coincide with him. New-York city, with Brooklyn and Williamsburg, is half as large as Paris; and in this latter city, ten million pounds of table grapes are consumed yearly.

You will, I think, be surprised to hear that many wealthy farmers, near Philadelphia, buy their apples yearly,—this year, at one dollar per bushel; and this, too, when they acknowledge that feeding cattle and raising grain does not pay more than three per cent. on the capital invested in farming. Some of them mean well; they have *intended* to plant out trees every year for the last twenty years!

B. G. BOSWELL.

Philadelphia, Feb. 14, 1848.

THE CULTURE OF THE CHINESE PRIMROSE.

BY S. B., NEAR PHILADELPHIA.

A FEW REMARKS, upon the cultivation of one of the most desirably popular and free flowering winter plants,—one, too, so easily cultivated by all who have a taste for flowers, and a window that lets in the least rays of the sun, will, perhaps, be acceptable to many of your readers, as this is the time to prepare for next winter's blooming.

The *Primula sinensis*, or Chinese Primroses, are window or parlor plants of easy culture; and, when properly attended, the pink and white varieties afford a constant

succession of flowers from the 1st of December to the 1st of April. If the cultivator has a few plants to begin with, he would do well to choose two plants of each variety, and place them where they will receive the free benefit of the sun, so that they may ripen their seed early and well. In choosing such plants to save your seed from, take those whose flowers are nearly semi-double, with thick and regularly shaped petals; and it would be better never to cut the flowers of the seed plants, as the seed saved from the *first flowers* is the best. I need not say that selecting the seed carefully, from fine blossoms and of the best varieties, is a matter of great consequence;

[* We know the apple crop at the Pelham farm, last season, was an enormously large one; but we presume our correspondent's estimate of that crop is only an *estimate*, and not a precisely ascertained amount. We endeavored to obtain an exact account of the product of this really great orchard for 1847, but without success. Ed.]

as it is as much trouble to grow a bad seedling variety as a good one. During the months of April and May the seed plants will be gradually ripening their seed; and and it is a good plan to look over the plants each day when the pods appear ripe, so that they may be gathered just before bursting. About the first of July sow your seeds in a seed pan [broad, flat flower pot,] well drained. A little moss should be placed in the drainage, and the remainder of the pan filled with light sandy soil, well sifted; place the pan where it will be shaded during the middle of the day. In two weeks your seedlings will make their appearance. When large enough to take hold of them, prick the young plants into other pans one inch apart. As soon as the plants appear to be well established and rooted, put them singly into three inch pots; putting them, as soon as they begin to grow, out of doors, in a partially shaded place, where they may remain until the pots appear to be well filled with roots. Then get some five inch pots. Let the hole in the bottom be well drained with broken crocks or pieces of charcoal. The best soil for the plants to grow in, is a light rich sandy loam. In potting, do not set the plants deep, but keep them well up in the pots, so that the water will drain well off the stems; as, otherwise, they are apt to damp off.

About the beginning of October, take in

some of your plants for early blooming, leaving the others out; for they take no harm from a slight frost. As soon as the weather is severe, place the plants that you wish for late blooming in a frame or cold room, where they will require little protection except from sharp frost. When your early blooming plants are past their prime, let the late ones take their place, always remembering to set aside some of your choicest plants, to save seed from for the ensuing winter's blooming. My reasons for recommending one year old plants in preference to older ones are these: that they require less trouble, bloom more freely, and are much stronger and finer than old plants, (unless you pot the latter into larger pots than is convenient for window culture.) By following these few simple hints, any lady may have her parlor windows constantly gay, during the winter months, with one of the prettiest and most satisfactory of all winter blooming plants, at little expense or trouble. Respectfully,
S. B.

Near Philadelphia, Feb. 24, 1848.

[The *Fringed* Chinese Primroses, of more recent introduction than those with plain flowers, are exceedingly pretty, grow easily from seed, as our correspondent has pointed out, and are well worthy the attention of those who wish a few perpetual blooming, parlor flowers. Ed.]

THE FRUITS OF SCRIPTURE.—General Dearborn, formerly president of the Massachusetts Horticultural Society, makes the following statement in the Transactions of that Society:—"Although so many trees, shrubs, and herbaceous plants, are mentioned in the Old and New Testaments, neither the pear nor apple is named; for

it has been conclusively established by Dr. Harris, in his Natural History of the Bible, that the tree and fruit described by Joel, and in the books of the Canticles, Proverbs, and Leviticus, was the citron, and not the apple, as the Hebrew word has been rendered in the English translations."

SPECIAL MANURE FOR PEAR TREES.

BY L. WYMAN, JR., WEST CAMBRIDGE, MASS.

DEAR SIR:—I have used and recommended the compost you speak of in the March number of the *Horticulturist*, in your article on "Special Manures for Fruit Trees," as a manure for the pear tree in particular. I have usually added to the compost, say in measure, one peck of fine *iron filings*, or one peck and a half of crude turnings of iron, to each load of peat, or muck, and in that proportion for a larger or smaller quantity; and have always noticed the most favorable result.

Two years since I applied this compost to a large pear tree which stood in a damp loamy soil, but which had not borne any fruit of consequence, for six or seven years in succession, although it grew rapidly in size, and sent out a large number of fine healthy shoots. The owner of the tree proposed engrafting some other kind of scions upon the stock, it being a fine variety (the Andrews.) I recommended "one year's patience." He then said—"What would you do with it?" I replied—"I would attempt to remove it, or give it a better soil, and one more adapted to its wants." He remarked—"Very well, take it under your charge; I will spare it this year."

After examining the soil very carefully, I found, as before remarked, a clayey loam, quite damp, and the tree growing in a lone situation. I caused nearly all the earth to be removed from the roots of the tree, and the turf taken off in a circle of seven feet diameter, leaving the tree in the middle of a pan, caused by the removal of the sod and earth. I then applied a sufficient quantity of compost to fill the hole full, the whole new soil rising a little around the body of

the tree. The quantity of muck used was one quarter less, in this instance, as I believed the tree required not so large a quantity of muck as one would growing in a higher location, but rather more sand. I used sand. My compost was formed as follows: three parts of muck to one part of sand, and a proportionate quantity of potash water;* and iron filings, one peck and one-half to the load. The tall or leading shoots of the tree were shortened, the tree well scraped and trimmed, &c. The result of this application was a *full crop of pears*, and the tree making, the same year, a good growth of wood, every way healthy; the fruit, two barrels and one-half, grew fair and ripened well; and the tree has ever since borne a good crop, and continues to grow vigorously. This is, to my own mind, a sufficient test of the utility and value of the compost you recommend in your widely extended and truly valuable work.

Two years ago I had occasion to remove a Jargonelle Pear Tree which had borne fruit, and which was seven inches in diameter. Having previously prepared a hole for the same, of sufficient size and depth, I lifted the pear tree from its original situation by digging a trench five feet from the body of the tree, and of sufficient depth to enable me to cut off very smoothly all the roots of the same, leaving a large ball of earth remaining attached to the tree. Then, by means of levers, the tree was raised easily and carefully, and removed to its new location and secured, and the hole filled up with the composition recommended by you in your article on "Special Manures for

* See page 427. Ed.

Fruit Trees," with the addition of the iron filings only. The tree was removed early in the month of April, and ripened, the same year, some forty fine pears, and grew well. The next season it bore nearly as many pears as it ever bore in one year previous to its removal; and this year, 1848, it will doubtless bear and ripen a larger quantity of pears than it ever has in any previous season.

Salt, as an article of manure for the *plum tree*, I have long known to be valuable, and have used to considerable extent. I shall give you, this fall, the result of se-

veral experiments which I am making with salt, charcoal, &c.; for I believe a little more practical knowledge only is wanted, by many of our agriculturists, to place the plum, the pear, and the peach, in all their varieties and richness, within the pale of every kitchen garden. Yours truly.

L. WYMAN, JR.

West Cambridge, Mass., April, 1848.

[The foregoing is precisely to the point, and is also exactly the kind of evidence that we are most desirous of placing before our readers on this important subject. Ed.]

ON TRANSPLANTING EVERGREENS.

BY T. A. S., SYRACUSE, N. Y.

THE mode of transplanting evergreens, recommended in your last number, by Mr. BARTLETT, resembles, somewhat, one adopted by myself a few years since, and which was attended with similar favorable results. Mr. BARTLETT, however, like his predecessor, Mr. THOMAS, has failed to give the *principle* on which his practice is founded, which gives to the subject the appearance of a successful *experiment* merely. By your leave I will supply that omission, and state the results of my experience, with the causes of both success and failure. My *modus operandi*, too, differs a little from that of Mr. B.; but that little leaves the process independent of the coincidence of a *freezing night*, and the operator at liberty to perform his work when it suits his convenience, in the proper season for transplanting.

The difficulty in removing evergreens lies in the extreme delicacy of their roots, and the fatal injury they are liable to receive from exposure to the sun and air. It is stated by LOUDON, that by the exposure

of their roots, the extremities of their fibres, the *spongioles* become closed; and, unlike deciduous trees, *when once closed, they never again expand, or perform their proper functions*. That evergreen, therefore, whose roots have been exposed but for a short time to the rays of the sun, or even to the atmosphere, is deprived of its means of taking up nutriment; and however well planted and tended afterwards, its death is certain. It may survive for a time, existing on its present supply of aliment and a small portion, perhaps, drawn from the atmosphere through its leaves and the pores of the branches and body, but the result is inevitable. This theory, or principle, seems abundantly sustained by my own observation and experience.

In the fall of 1844, I wished to plant about 160 feet of hedge, of the White Cedar. A trench was dug 20 inches in width and depth, and filled half way with the soil removed, mixed with an equal portion of that from which the cedars were to be

taken, (swamp muck,) with a like admixture for filling in. The trees were then taken up, care being had to preserve the roots entire, as far as practicable, and free from bruises. They were set in a body, with the roots on the ground, as fast as taken up, and removed for planting the following morning, which was completed in the course of the day. The weather was thought favorable, it being cloudy, though attended with a dry wind. In this manner, and under such circumstances, two-thirds of my hedge was planted, great care being taken in the setting of the trees. The hedge *appeared* very fine; and already I began to experience an anticipated triumph over some of my friends whose observation or experience led them to believe that evergreens could not be removed successfully from their native forests. My triumph, however, was of short duration. Before further planting, the suggestion by Mr. LONDON, above referred to, came under my observation. I saw at once my labor lost; that my beautiful hedge was doomed to speedy death. But the suggestion also came as a revelation. I understood the failure in ninety-nine cases in a hundred, of those who had attempted to adorn their grounds with these beautiful denizens of the wilderness, and who predicted no better result to attend my efforts.

Before proceeding to complete the work, after some reflection I adopted a mode alike, in one respect, to that recommended by Mr. BARTLETT. *A well tempered spade was ground to a fine edge*, both to facilitate the process of severing the roots and surrounding substances, and for the purpose also of making a *clean* cut, and avoiding any bruise or fracture of the roots severed; in digging, taking care also to incline the handle of the spade towards the tree, so that the *chipped* side of the cut should be

on the portion *excised*. With a firm pressure of the foot, the spade was readily *driven home*; and after making the circuit of the tree, it was lifted out with the ball of earth attached, which, from the adhesive nature of the peaty soil, held by the undisturbed roots at the base of the tree, was sufficiently firm for removal the distance required. In this manner were the trees procured for the completion of the hedge. The results proved the correctness of the principle, and the mode, the adaptation of means to a given end.

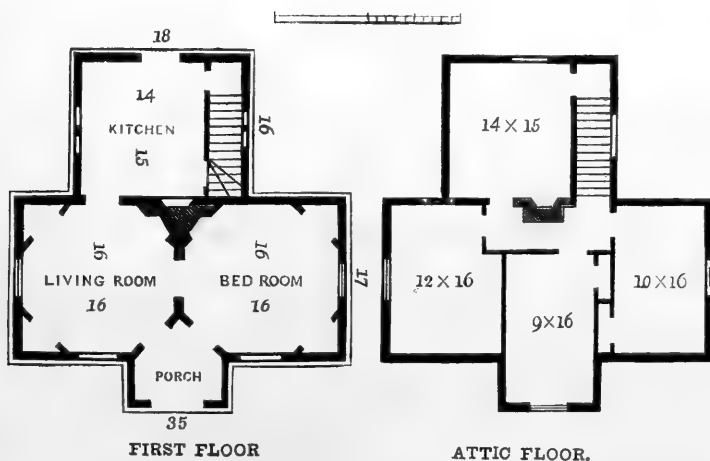
Of the portion first planted, not one-third survived the ensuing summer; and these in a condition to become the prey, probably, of the winter and summer following. Of the last planting, consisting of nearly 200 trees, *every one* came through the season well, although the summer of 1845 was a trying one for newly planted trees. The fall of 1845, the portion first planted was taken up and replanted in the manner subsequently adopted; and the hedge is now all in a healthy condition.

The same season I transplanted about 75 fir trees. As these were obtained from the vicinity of Oriskany, Oneida county, some 40 or 50 miles distant from Syracuse, two or three days were required to transplant them from their old to their new homes. Trees, too, of a larger size were required, as they were designed to be planted singly, or as standards, which would also require a corresponding ball of earth attached. From the increased weight, together with distance of transportation and extra handling, this ball was liable to be shaken off; to prevent which, a sufficiently "*cold freezing night*," at a proper season for transplanting, fall or spring, might hardly be expected, nor often occur. At least, I did not wait for one; but, provided with a quantity of old *matting, sacking, canvass, &c.*, with a ball of





SMALL COTTAGE.



cord of proper size and strength, I took the cars one fine morning in November, and before noon was among the subjects for removal. The firs were cut and lifted in the manner practiced on the cedars. A piece of canvass of proper size was spread, and the tree with the ball attached placed in its centre, and the corners and sides drawn up snugly and fastened around the body at the base of the trunk with one end of the cord. The cord was then passed over and around the ball, and covering in different directions till the whole was made snug and firm. In this manner the desired number of trees were selected and *bagged*. A little water was then thrown on the balls, to keep them moist and render the soil more adhesive; when they were loaded on a wood car and taken to Syracuse, over not, then, the smoothest railroad in the world. The day following, some of them, and others not under several days, were planted. Of the number removed, six only were lost; and these nearly, or quite, all from defects in the disposition and situation of the roots, which could not be detected while covered

with the earth taken up with them. The size of the trees was from 7 to 10 feet, and one nearly 14, in height. I have had occasion to remove some of these trees since, and found that they were bountifully supplied with fibrous roots, thrown out at the extremities of the stumps of roots cut off in taking up originally; the stumps themselves being sound to the very end, and healing over.

The process recommended by Mr. THOMAS is, probably, the only safe one for very large trees; but requires too much and unnecessary labor for those of ordinary size for transplanting. The mode given by Mr. BARTLETT would, doubtless, prove effectual, but needs a little too nice an adjustment of time and circumstances. If my own shall be deemed to have any advantages over theirs, or to encourage and facilitate the transplanting of our varied and beautiful native evergreens, (the *principle* and mode of removal is applicable to them all,) it is at your and your readers' service.

T. A. S.

Syracuse, March 12, 1843.

DESIGN FOR A SMALL COTTAGE.

OUR FRONTISPIECE shows an original design for a small cottage, in the simple, and yet somewhat ornamental style, which we think best adapted for the purpose when *wood* is the material to be employed in building.

The roof projects two feet, showing the ends of the rafters as brackets. The exterior is covered with the *vertical weatherboarding*, described in detail in vol. i, page 109. For a cottage of this class, we would be content with unplanned plank, the joints covered with the necessary strip or fillet, and the whole well painted and sanded.

A glance at the plan of the first floor, will show that its accommodation is very compactly arranged. By placing all the flues in one stack, no heat is lost in winter; and by cutting off the corners of the two principal rooms, convenient closets are afforded. As, in a house of this class, the kitchen is usually the room most constantly occupied by the family, there is no objection to the entrance to the stairs being placed within it.

The plan of the second floor shows four good bed-rooms, which, with the best bed-room on the first floor, makes five

sleeping apartments. This would enable a family, consisting of a number of persons, to live comfortably in a house of this size.

In portions of the country where timber is abundant, this cottage may be built at a cost of from \$400 to \$600. In this neighborhood, it is estimated to cost \$750.

REVIEWS.

A MANUAL OF THE BOTANY OF THE NORTHERN STATES, *from New-England to Wisconsin, and south to Ohio and Pennsylvania, inclusive, arranged according to the Natural System; with an introduction, containing a reduction of the genera to the Linnæan artificial classes and orders, outlines of the elements of botany, a glossary, etc.*; by ASA GRAY, M. D., Professor of Natural History in Harvard University. 12mo, 710 pages. Boston and Cambridge: James Monroe & Co., 1848. (\$2: to schools and academies \$1.50.)

THERE are many persons who look upon botany as a kind of mysterious puzzle, to render trees and plants—things simple and beautiful in themselves—strange, complex, and “scientific.” Consequently, they have a horror of it; and they live a whole lifetime, with the greatest possible desire to know something of that wide realm of beauty and interest—the vegetable kingdom,—and die almost entirely ignorant of it.

Their prejudice is one as reasonable as that of a wayward child, who would forego all the pleasure and profit of knowledge because of the, to him, unmeaning drudgery of acquiring the alphabet. For, after all, the forbidding part of botany is but the necessary alphabet, which science has contrived to enable men intelligibly to classify, arrange, and methodise a part of nature's works, in order that we may read and understand her better; just as the alphabet, and the rudimentary lessons which follow it, are only the necessary stepping-stones to enable us to stand high enough to hold converse with the otherwise sealed domain of written thoughts.

And is it not worth a few days labor,—this science, which enables us to understand not only the history, the names, the associations, and the virtues of all plants, but also the curious relations, the admirable laws which govern their structure, and the wonderful part which they bear in the economy of the universe? Is it not worth while to become familiar with a study which, wherever our steps may lead us, from high, cold mountain tops, crusted over with only mosses and lichens, to deep, warm tropical valleys, where the luxuriance of vegetable forms almost bewilder the senses, still furnishes us with new subjects for consideration; a study that often makes a field-path, or a ramble by the way-side, that is dull and mean in the eyes of the unlearned, rich in interest and beauty to him who finds a botanical gem under his feet, that fills his soul with delight. Truly has it been said, that more than half the world is stone-blind. Ennui consumes them, and life is dull and vapid! They have no more notion of the wealth of interest that covers and embroiders this *dull* earth which they despise, than they have of the true motions of the binary stars!

Seriously, there is no thinking person whose home is in the country, and who loves nature,—much to be pitied are those who live in the country and not love her,—who would not find a great and unfailing resource in this beautiful science. The difference between knowing plants and trees as a naturalist knows them, or as they are

known by the uneducated, is not unlike the difference between a familiar acquaintance with every individual of a large collection of agreeable people, or knowing, perhaps, the *names* merely of a few strangers in the crowd. The country, the fields, the forests, the mountains, have a positively different, and altogether new meaning, to him who sees, not only the general grandeur and beauty of the landscape, but, also, studies with delight every detail of fern, shrub or forest tree, in the foreground.

Suppose, for example, two persons clambering the breezy hill-side of a valley, in the northern states, in the month of June. They both see, here and there, large groups and masses of a striking shrub, with glossy evergreen leaves, and large clusters of white or pale flesh-coloured blossoms. To one of these persons, this shrub is only "Laurel; a sort of *pisen* thing—dreadful hard wood." To the other, it is the *Kalmia latifolia*,—the broad leaved, or Mountain Laurel; not, indeed, the tree laurel of the ancient poets,—but borrowing the title from a slight resemblance in its unfading foliage. It commemorates the memory of PETER KALM, the pupil of LINNÆUS, who visited this country a century ago; and who could not, in his letters to his great master, sufficiently express his delight at seeing *an hundred acres* of it, blossoming like a giant's garden in the new world's wilderness. Its delicate blossom, shaped like a miniature parasol, is full of curious and beautiful points of structure. Then, as it belongs to the same natural family as the *Rhododendron*, he recalls the reputed poisonous qualities of the *honey* of some of the tribe. He remembers the story told by XENOPHON, of the army of the 10,000 Greeks in their retreat, vast numbers of whom lay about the ground for hours in their camp as if dead, simply from eating the *Rhododendron* honey.

And this, and fifty other curious little interesting facts, pass through his mind; and he makes the circuit of the world, while he rests for a moment in his ramble, upon the associations that hang about a bit of mountain laurel.

Every intelligent farmer's son and daughter ought to be somewhat familiar with natural history; not only for the profit and pleasure which they themselves would derive from it; not only that it enlarges the mind, and gives the student a better knowledge of the great purposes of the creation; but because *they* are the proper and natural guardians and keepers of nature's secrets. To people who live in towns, belong the mysteries of great cities; mysteries, too, from which one does not always learn to find the heart lighter, or one's trust in human nature stronger. But to country people belong the mysteries of the rural life, the language and habits of birds and insects, the antique geological secrets of the hills and mountains, the inexhaustible lore of the woods, forests, and fields; and, we are bound to add, that these are mysteries that exercise a benign influence on the mind, that calm the excited, restless soul of man, and make the heart swell with love to the good God, and all his creatures.

These studies are also the proper *accomplishments* of the country. They are not only the solid underlayers of fields of profound thought which, closely pursued, might occupy man forever; but they furnish, in the hands of those who live in the country and are familiar with them, frequent and agreeable topics of conversation. They are a natural offset to the *news of society* which our guests bring us from town; they furnish us an exchange fresher and better than their own coin, with which we can pay back these "dwellers in cities, and sitters upon many divans."

There is, we may say, *en passant*, an error, into which smatterers in science not unfrequently fall, that beginners ought to guard against. This is *pedantry*; a fondness for display of one's knowledge by introducing, on every possible occasion, hard technical names, worse than "sounding brass" in the ears of the majority of listeners. This is an insufferable piece of bad taste, to say the least of it; not a whit more pardonable than that of the schoolmaster, who astonishes his rustic neighbors with those hard words, of an indefinite number of syllables, which he had made especial search after in his dictionary. He who possesses knowledge on any subject not shared by those about him, will always find a demand made for it when it is needed; and *then* it will be the better appreciated and understood, from its not being intruded at inappropriate seasons. Only a very young botanist, therefore, will cry out *Hypericum perforatum*, whenever he passes through a field filled with Johnswort!

We must not forget, in this rambling sort of gossip which flows from our pen, the work before us, or its merits. To those who know Prof. GRAY, it is almost needless to say anything. To those who do not, we may remark, that he is both, one of the most profound botanists, and one of the most acute botanical writers of the age, in any country. This work, therefore, which has cost him much labor and study, (for it is a book full of *facts*, which must be, and have been, *verified* step by step,) is, we are not surprised to find, the most complete Manual of Botany of the northern United States ever published. Its purpose is to enable the student to ascertain the name of, or identify any and every plant to be found growing wild from the northeastern boundary to Wisconsin, and south to

Maryland; to learn its natural family, its habit of growth, and something of its history. It is what the Germans significantly call a "hand-book;" one that the student may carry under his arm into the fields, and, with a little practice, very quickly find out the name of any new plant or tree that is unknown to him.

In order to render this process as easy as possible, the author has endeavored to avoid, in his descriptions, the use of technical words whenever those in common use would apply; he has, by *italicising* the *leading traits* in the description of a species, enabled us, much more readily than before, to distinguish it from such other species as most nearly resemble it; and he has arranged all those species most nearly alike into *definite* groups or sections, to simplify the task of analysis.

We would very gladly, if our space allowed us, give examples of this excellent treatment of the subject from the work itself. But we feel that this is quite unnecessary; for the work is one of such superior character that it will directly become the standard manual of the northern states. Dr. GRAY says, in the preface, that it is intended chiefly "for the use of students and practical botanists." We hope there are *thousands* among our own readers, especially young persons, who are yet neither students nor practical botanists, but who will speedily become so,—and, after familiarising themselves with some good elementary work,* will make this "New Botany of the Northern States" their intimate companion, till they know something of the "secret history" of every plant that grows or blossoms within twenty miles of their country home.

* Such as *Gray's Botanical Text-book*, *Lindley's School Botany*, *Lindley's Ladies' Botany*, etc.

THE FAMILY KITCHEN GARDENER—containing plain and accurate descriptions of all the different species and varieties of culinary vegetables, and the best mode of cultivating them, in the garden or under glass, etc.; by ROBERT BUIST, of Philadelphia. New-York: published by J. C. Riker. 12mo., 216 pages. 1847.

THIS is a cheap duodecimo volume, the purpose of which is very well explained by the title page.

It is a little work, with scarcely a superfluous word, but well stored instead with plain, sensible directions on the cultivation and care of the kitchen garden. The author writes as an intelligent writer should, who knows by heart, and by long practice, all that he wishes to impart to his readers;

and the book is, therefore, very naturally, one that we can recommend with great confidence as second in usefulness to none of its kind yet published in this country.

Those who are not adepts in kitchen gardening, and wish to add to their stock of knowledge; those who are beginners, and wish to learn everything, and those who are so little familiar as still to need a *prompter* to tell the what, and when, and how to plant, that their tables may have a supply of all those good, nutritious, wholesome vegetables that go to make up the daily catalogue of a good dinner, will find *Buist's Family Kitchen Gardener* as useful and as indispensable as the almanac itself.

FOREIGN NOTICES.

FOREIGN NOTICES OF NEW FRUITS.—MR. THOMAS RIVERS, of Sawbridgeworth, Herts., is, as many of our readers are aware, an English nurseryman, who devotes himself more intently to collecting and propagating fine and rare fruits than, perhaps, any other in Great Britain. The late *Supplement* to his *Catalogue of Fruits*, which we have before us, contains a number of interesting remarks on new or rare varieties, which we extract for the benefit of those of our readers who may not have seen that pamphlet.

We believe nearly all of those foreign varieties named, are now in the country, or have been imported this spring, by various amateurs and commercial growers in the United States; though, perhaps, very few of them will be offered for sale until the next autumn.

It will be seen that there are several of our American fruits noticed; among others, the *Jefferson Plum*. We are glad to find this most delicious variety maintains, in England, the high reputation which we have always claimed for it. It will be seen, by comparison, that many fruits ripen a month or more later in the cool, humid climate of England than in the middle states.

PEARS.—In a recent tour in Belgium I was enabled, by a special introduction, to see the garden of (I lament to say the late,) Major Esperen. This gentleman devoted many years of his life to the raising of new fruits from seed, more particularly pears. He succeeded in giving to the gardening

world some very valuable late pears. Most of these are enumerated in my Catalogue; but I am now enabled to recommend them with the greatest confidence, having seen the parent trees in full bearing this present autumn. The first in my note-book is—

Belle après Noël; or Belle de Noël (Esperen). This is a full sized pear, about the size of the Brown Beurré; melting and high flavored, ripening, according to circumstances of soil and season, from December to the end of January; the tree very hardy, and a good bearer, 5s.*

Bergamotte d'Esperen. A pear of medium size, inclining to the shape of the Bergamot pear; melting, high flavored, and in perfection from March to the end of April; tree robust, hardy, and a good bearer, 3s. 6d.

Beurré Bretonneau (Esperen). A new sort, not in my Catalogue; fruit oval, full sized, melting and high flavored; colour green, spotted with brown; in perfection from January to March; tree robust, hardy, and a great bearer, 10s. 6d.†

Bezi d'Esperen. Fruit full sized, slightly turbinate, melting, and of good flavor; in season from December to the end of January; tree of not very vigorous growth, but a good bearer, 3s. 6d.

Elise d'Heyst (Esperen). Fruit of medium size, melting and high flavored; in season from March to the end of April, and even till the middle of May, if kept in a cool fruit room. This pear requires a warm and generous soil; in cold soils it is often not first rate, 3s. 6d.

Fondante de Malines (Esperen). Fruit of medi-

* Those at 5s. each [Sterling—about \$125: Ed.] will be supplied as dwarfs or pyramidal trees on the pear stock, or on the quince at that price; those at 3s. 6d. as dwarfs or pyramidal trees, on the pear stock only, at that price. Strong pyramidal trees on the quince, of these sorts, are 5s. each.

† On the pear stock only.

um size, melting and good; season from January to February; tree very fertile and vigorous, 3s. 6d.

Josephine de Malines (Esperen). This is, I believe, a seedling from the Passe Colmar, which it much resembles in habit; fruit rather smaller than those of Passe Colmar; green or greenish yellow when ripe, melting and excellent; season from March to May. Like all very late pears, this requires a warm and rather light soil when on the pear stock; it seems to do well on quince, and will doubtless ripen in cold soils, and situations unfavorable to it on the pear stock. The parent tree of this variety, when I saw it, formed a beautiful pyramid, 12 feet high, and covered with fruit, 5s.

Napoleon d'Hiver (Esperen). Fruit large, turbinate, melting; season January to February; tree very robust, hardy, and a great bearer. The parent tree of this variety, apparently some ten or twelve years old, was loaded with fine fruit, 5s.

Soldat d'Esperen, or Soldat Laboureur (Esperen). Fruit large and turbinate, only half melting, but high flavored and excellent; season from January to February; tree very robust, and a great bearer. I was much delighted with the beauty of the parent tree of this variety; it formed a handsome pyramid, on which its large fruit hung at regular distances, almost as if placed there by the hand of the cultivator, 3s. 6d.

Orpheline, or Soldat Laboureur of the French, is a totally different pear to the above. It is, in my opinion, a variety of the Beurré d'Aremberg, and has, indeed, been disseminated very largely under that name; but the Beurré d'Aremberg which I received from the Horticultural Society, some fifteen years since, although of the same race, seems different. I have paid close attention to these varieties these three years past, and find the latter to produce numerous thorns, both in my specimen tree and in all the young trees. The fruit, also, although much like the former, and of the same flavor, is smaller; the trees are so dissimilar in habit as to be distinguished by the most casual observer. On the Orpheline or Soldat Laboureur, not a thorn is ever to be seen, and the trees are more robust in their growth; both succeed admirably on the quince stock. At present I am induced to think them distinct, and to consider the latter as a superior variety, although Mr. Thompson, of the Horticultural Society, is inclined to differ from me. I found, also, in Belgium, two varieties of this pear—one known as Beurré d'Aremberg, or Beurré Deschamps, and the other as Orpheline d'Enghien; neither of these were the Glout Moreau, known universally in France as Beurré d'Aremberg.

Susette de Bayay (Esperen). Fruit of medium size, knobby and irregular in shape, something like the Ne plus Meuris; flesh melting, high flavored and excellent; season from March to May; a pear of the highest excellence; tree very vigorous and very fertile. This variety in particular deserves a place in every collection, 3s. 6d.

All the above will succeed well in the South of England, and in warm situations in the Midland Counties, as pyramids or espaliers; but in the North, it will be advisable to give them a south-west or south-east wall.

Triomphe de Jodoigne. This pear was raised a

short time since by M. Bouvier (since deceased,) a great pear amateur at Jodoigne, in Belgium; it is one of the very largest of our melting pears, as large, or even larger, than the Beurré Diel; flesh melting and excellent, without the musky flavor peculiar to that variety; season December; tree astonishingly vigorous and robust, 5s.

In addition to the foregoing, there are two other varieties of late pears well worthy of attention; they are not exactly new, but are really good varieties.

Beurré gris d'Hiver nouveau. In shape much like the Easter Beurré, and equal to it in size. This is a most abundant bearer, as a pyramid on the quince, flesh melting and high flavored, and ripens from the end of December to the end of January, or later.

Crassane d'Hiver (Brunont or Bruneau). This is far superior to the Winter Crassane of the late Mr. Knight, both in size and flavor, being a melting pear of first rate quality; it bears freely as a pyramid on the quince, ripening in January and February, and in some seasons will keep till March.

A few directions for summer pruning pyramidal pear trees will not, perhaps, here be out of place. I gathered some experience during my tour in Belgium and France, which I feel happy to impart. I have, in the "Miniature Fruit Garden," given directions to shorten *all* the shoots of pyramidal pear trees towards the end of summer; if root pruning is closely attended to, I am still inclined to consider it best to do so; but if the trees are suffered to grow naturally, a modification of the pinching system of Monsieur Cappe, as given in the *Gardener's Chronicle*, No. 28, 1847, may be followed with advantage.

To follow this method, close attention must be paid to the trees early in June, and every shoot on the horizontal branches, except the leading shoot on *each branch*, must be pinched off to within three or four buds of its base, the foreright shoot on each branch must be left to exhaust the tree of its superabundant sap. In Belgium, I observed all these foreright shoots on the trees towards the end of August, and I was told that they were left to exhaust the tree of its sap, and were not removed till the winter pruning, when they were shortened to within four or five buds. I am inclined, however, to think that it would be an improvement to shorten them towards the end of August, as the buds would then swell and prepare themselves to form, in the following season, bloom buds. The leading shoot of the tree may also then be shortened; this gives pyramidal trees a dressed and cultivated appearance, and exposes the fruit to the full influence of the sun and air. I must say, however, that I prefer root pruning to pruning of the shoots, and the trees of Monsieur Cappe, in the Jardin des Plantes, at Paris, confirmed me in this opinion; these trees are not, strictly speaking, pyramidal trees; they are rather conical trees, with very broad bases, requiring much more room than pyramids. No trees can be more beautiful as to the equal distribution of their branches, but they are sadly lacking in a tendency to fruitfulness. I think I write the truth when I say, that in this fruitful season not more

than half the trees had fruit upon them, and this after many years of careful cultivation; and I was informed by a friend living near the spot, that this was the first year they had borne any quantity of fruit. It is indeed a joke among the French gardeners, probably dictated by a little envy, that the trees of M. Cappe are "exceedingly productive—in leaves and shoots!"

On the Continent root pruning is not known or thought of, and if broached it would probably be excessively ridiculed; but the trees of M. Cappe, with their over luxuriance, I have no doubt would be much benefitted by it, in spite of the dry soil and climate of Paris. I was informed that all his trees were on the pear stock, which will account for their vigorous growth.

The quenouille, or tying down system, is now quite out of fashion in France, and in truth it does look very barbarous and unnatural; the trees trained in this manner in the Potagerie, at Versailles, are mostly on quince stocks; they are from twenty to forty years old, and are very productive, but very ugly; all the shoots from the horizontal and depressed branches had been cropped off apparently in July, as Monsieur Puteau, the director, is, I believe, adverse to the pinching system of M. Cappe. I did not observe a single quenouille in Belgium, all were pyramids, even in the gardens of the cottagers; and in general, these were very beautiful and productive trees. In many cases, when on the pear stock they were too luxuriant, and required root pruning, but this I could not make the gardeners comprehend.

If the article in the *Gardener's Chronicle*, No. 28, 1847, is read attentively, it will be seen that M. Cappe is constantly at war with the heads of his trees; his pinched shoots will often break again and again, and give him much trouble. I closely examined some of his trees, of sorts which I knew to be, under ordinary management, shy bearers, and found them, to use the language of my note book, "entirely bare of fruit and fruit buds;" this was towards the end of last August.

The pinching system of M. Cappe, without root pruning, is, therefore, objectionable for small gardens, on account of the trees requiring much room, and becoming difficult to manage from their great size and height; for many of his trees are more than 15 feet high. The leading shoots of the horizontal branches of his trees are often left in the winter pruning nearly one foot in length; I observed this on the trees of Beurré Diel, De Curé, Beurré Rance, &c. &c., so that the tree soon spread over a considerable surface; a tree of Louise Bonne, however, was most beautiful and compact; also a tree of Beurré d'Amanlis, which was covered with fruit and fruit buds. Sans Pepin was bare of fruit, but a most regular and beautiful tree. It appears to me that the pinching system, coupled with root pruning, will be all that can be desired in pear culture.

For large gardens, the broad based conical trees, on the pinching system of M. Cappe, with triennial or quinquennial root pruning, will be found advantageous; for smaller gardens, the more closely pruned pyramidal or cypress-like trees, with biennial or annual root pruning, are sure to be annual

sources of pleasure, as they will be always within the reach of the amateur pruner, who can thus give his trees an occasional pinch without inconvenience.

CHERRIES.—The culture of the cherry on the *Cerasus Mahaleb* has been so successful here the past season, that I am induced further to recommend it. With nets over my small bushes, I kept most of the finer varieties till August; the wasps then committed such ravages that I was obliged to gather nearly all; but, for the sake of experiment, I covered some trees of the Murello and Late Duke Cherries with cheap muslin. This preserved the fruit in perfection till the end of September. Cherries may now be made part of our desserts from May, commencing with the *Cerise Indulle*, till late in October. There are some new early cherries of great merit, particularly one called *Belle d'Orleans*, ripening early in June, large, sweet and excellent; of this I have not yet propagated any plants, as it bore fruit last summer for the first time. I may here mention that in rich soils Dwarf Cherries on the *Cerasus Mahaleb* grow with extreme vigor for three or four years; in such cases they should be annually root pruned, they will then soon become compact, fertile bushes. I will now notice a few sorts that fruited here the past summer, and of which I tasted and noted their qualities.

Bigarreau de Hildersheim. I ate the fruit of this variety, preserved under muslin, September 10; its flesh was firm, good and sweet, and would have (as I have written in my note book) "remained good till the end of the month."

Cerise Indulle, or Early May, is a small sub-acid cherry, agreeable and valuable for its extreme earliness, as it ripens in some seasons towards the end of May; it succeeds admirably on the *Mahaleb* stock, and is very valuable for forcing in pots, forming a small, compact bush.

Downer's Late Red. This is an American variety, sweet and good, and ripens from eight to ten days after the *May Duke*.

Louis Philippe. A cherry much like the *Kentish*, but sweet and very refreshing. A great bearer, and forms a pretty fertile bush.

The *Madison Bigarreau* is an American variety; flesh soft, rich and juicy. It is an excellent bearer on the *Mahaleb*, and in season just before the *Bigarreau*.

Reine Hortense, Monstreuse de Bavay, Belle de Bavay, 16 à la Livre, Belle de Petit Brie—for, like most valuable varieties of fruits, it has numerous synonyms—is a first rate variety; very large, and apparently a hybrid between the *May Duke* and *Kentish*; flesh soft, very juicy, sweet and refreshing; ripening about a fortnight after the *May Duke*, and may be kept on the tree under a muslin cover till late in August.

Tardive de Mons, or Merveille de Septembre, is one of the latest cherries known; fruit rather small, flesh very firm, rather dry, and very sweet. I gathered the fruit from my specimen tree the 20th of this present month (October); they were perfectly sound.

CURRENTS.—A few years since, Mr. May, of Leeming-lane, near Ripon, Yorkshire, advertised

a currant under the name of "May's Victoria;" which, I believe, he procured from the gardens at Raby Castle: this has recently been described as the "Raby Castle Currant." In a visit to the north, a short time since, I was informed that this currant has been long known in the neighborhood of Hexham and Newcastle as the "Houghton Castle Currant;" and that it was sent from that district some years since to the gardens at Raby Castle. This is undoubtedly the same as the Goliath; it has, therefore, at the present time four names. It is an excellent late currant.

Plums.—Among the novelties in this family the following have fruited here abundantly from pyramidal trees in the open quarters:

Bleecker's Scarlet. or **Lombard**, an American variety, one of the hardiest and most prolific sorts I have yet seen: fruit large, and of a purplish red; ripe September 16th; not quite first rate, but very good.

De Montfort. This is much like **Royale Hative**, but larger; ripe middle of August; exceedingly rich and good.

Imperiale de Milan. Fruit large, oval, and of a deep purple; ripe October 12th: juicy, sugary, and excellent.

Denniston's Superb. An American plum, very hardy and robust in its habit, and one of the greatest bearers we have; fruit green, about the size of the **Green Gage**, but slightly oval; a good plum, but not equal to the **Green Gage** in flavor; it is, however, valuable on account of its great productiveness, and also because it ripens from a week to ten days before the **Green Gage**.

Isabella. Fruit large, red, handsome, and very good; ripe the middle of September; flesh parts freely from the stone.

Jefferson. I ate my fruit of this fine plum, preserved on the tree in a muslin bag, October 12th, from a dwarf in the open ground; nothing can be imagined more delicious; the moment it was bitten the juice poured out; flavor rich and refreshing, not too luscious, as is often the case with a **Green Gage**; colour golden yellow, spotted with brown; in size nearly equal to **Coe's Golden Drop**, from which I should say it was raised, as the trees closely resemble it in their leaves and shoots.

Mamelonne. This is a plum raised by M. Sageret, a gardener, near Paris; it is almost grotesque in its shape; instead of being depressed at the stalk, as most round plums are, it has a small nipple-like protuberance, and some of its fruit are irregularly knobbed; it is of the **Green Gage** family and much like it in flavor, parting freely from the stone and ripening ten or twelve days before it; colour green, densely spotted with red.

Peach Plum. This is a large red plum, very handsome, good, and a great bearer; it ripened here about the middle of August.

Purple Favorite. An American plum, ripe September 12th; purple, large, and very handsome, roundish, in shape like **La Royale**; a very excellent and hardy variety.

Quetsche, St Martin's. One of our best and hardiest late plums. I gathered my fruit October 20th; colour pale yellow, spotted with brown; in flavor it slightly resembles the **Green Gage**; very

juicy and good; shape oval; about equal in size to the **Imperatrice**, or perhaps a little larger.

Red Gage. An American plum, rather small, red, ripe beginning of September, agreeable.

Reine Claude de Bayay. I saw the parent tree, a standard of this very fine plum, in the garden of the late Major Esperen at Malines, towards the end of last August. It is apparently about fifteen years old; it was covered with fine fruit; they were indeed more numerous than the leaves. I ate of fruit produced here on a dwarf standard, preserved under muslin, October 12th, perfectly fresh and unshrivelled; shape roundish oval; colour greenish yellow, spotted with red; flesh rather firmer than that of **Jefferson**, but juicy, sugary, rich, and excellent; size between the **Green Gage** and **Washington**; indeed it much resembles the latter in shape; it has roundish shining leaves and smooth shoots, very much resembling the **Washington**, only that the former are smaller and the latter more slender, and is doubtless a hybrid between that and the **Green Gage**. To this plum hangs a not very agreeable tale. In 1843 I received it from France, and in the autumn of 1845, having a report from a friend on the Continent of its great excellence, I advertised plants of it for sale. Not having enough, I bought 100 from a most honorable nurseryman in France. When they arrived I felt some doubts, owing to their having prominent pointed buds. Before I sold any, I wrote to him expressing my doubts. In reply, I received an invoice from a nurseryman at Ghent, dated 1843, in which some plants were charged to him at a high price as **Reine Claude de Bayay**. As this person at Ghent had stated that he alone had received this plum from Major Esperen, my scruples were quieted; but when some plants I had left unsold came into leaf, in the spring of 1846, I found they were **Coe's Golden Drop**. In the autumn of 1846, feeling very anxious that my friends should have the true sort, and then beginning to doubt even those I had first received from France, I wrote to Mr. Van Houtte, of Ghent, for 100 of the true sort, to replace those which I had sent out incorrect in 1845. I sent these to my friends with the fullest conviction they were correct, as Mr. Van Houtte assured me they were; and as Malines is so short a distance from Ghent, I concluded that they *must be*. My chagrin may therefore be imagined when these plants, and grafts from them, came into leaf, in the spring of 1847, to find them, to all appearance, nothing but our old **Green Gage**, differing in leaves and shoots from those I received first from France, (the true sort,) which, as I have before stated, much resembles the **Washington** in habit. Mr. Low, of Clapton, also advertised plants of **Reine Claude de Bayay** in the autumn of 1845 or spring of 1846. I bought some plants to ascertain if they were correct, i. e., if they resembled in habit what I considered to be the true sort, with broad shining leaves. These proved to be the **Green Gage**; consequently, I am led to assume that all those sold by Mr. Low were the same. There are, therefore, in France, Belgium and England, three* varieties of plums bearing the

* I should think very probably there are four or five; for I saw a bed of plants in a nursery in Ghent under the name, which contained four or five sorts.

name of Reine Claude de Bavay, viz., the Green Gage, Coe's Golden Drop, and the true sort. The uncertainty respecting this plum gave me great annoyance last summer, and I determined upon a journey to Malines to see the parent tree when in fruit. When I arrived at Malines I found Major Espersen recently deceased, and I much feared that my attempt to get a view of the tree would be fruitless. I obtained, however, through the kindness of Mr. Van Houtte, an introduction to Madame Espersen, who seemed to take pleasure in pointing out to me the numerous proofs of the horticultural skill of her departed husband. I may here mention, merely to show how superiorly the Belgians and French manage their fruit trees in the open quarters (I cannot give them equal credit for wall trees,) that two small gardens here, not more than one rood each, contained some hundreds of pyramidal pears, plums and apples, nearly all perfect specimens, and covered with fruit. To return to our plum. I found, on inquiry of Mr. Van Houtte, that he had bought all the plants he had sold; in fact, he said, that having no nursery for hardy trees, it was his custom to buy all plants of that description. He was exceedingly loth to believe that he had been cheated; indeed, I think that even now he scarcely believes it, for he thinks that we cannot judge by their leaves or shoots if a fruit tree is correct to name. I can only say that I am able to distinguish all the popular sorts of plums, pears and cherries, by their leaves and shoots; and I am not alone in this, for every active foreman of the fruit tree department in large nurseries can do the same. To use a mild expression for cheating, Mr. Van Houtte has been victimised, has unconsciously victimised myself and others; and I have served some of my friends in like manner.

I must now beg those friends to whom I sent a tree last planting season, to replace the suspected one sent the year before, to oblige me with a line. I will then send them a plant of my own grafting, true, and nothing else but true. I have fortunately sold to many friends the sort I first received, which is true, and kept a list of those to whom I sent the trees that I bought, so that the error can and shall be corrected.

The October Green Gage, Reine Claude d'Octobre, is so much like Reine Claude Tardive as not to be worth keeping distinct; this is a rather small round plum, exactly like the Green Gage in colour and shape; flesh melting and rich, with the Green Gage flavor, but not quite so juicy; colour green, spotted with red; flesh parts freely from the stone. I ate my fruit October 22d, and found them excellent; it is perfectly hardy, and its fruit may be preserved on the tree, if the season is not very wet, till November.

Rivers' Early No. 1. I mention this plum only because it has invariably proved excellent, and on account of my having given it a name; it will, in future, be called "Rivers' Early Favorite;" its shoots are downy, it ripens a trifle earlier than the following, and in flavor is, I think, a little superior.

Rivers' Early No. 2. This is the hardiest and most prolific of all our early plums; in fact, it always bears a crop; I purpose to call it "Rivers'

Early Prolific." In Covent Garden market, in July last, the fruit sold readily at 7s. per sieve, containing about half a bushel. The shoots of this are smooth although it was raised, like the preceding, from *Precoce de Tours*, which has downy shoots; it may be called the Market Gardener's Plum, *par excellence*, on account of its great productiveness.

Yellow Magnum Bonum. This is an American plum of extreme hardness, very large, oval, good, but not quite first rate; its flesh clings to the stone. My fruit were ripe September 7; it seems to bear much more freely, as a standard or pyramid, than our old white Magnum Bonum.

RASPBERRIES.—The Perpetual Raspberry in my soil has not succeeded in bearing an autumnal crop. In the low, moist situation I saw it occupying in Suffolk it succeeded admirably; but a new variety I introduced last season from the Continent will entirely supersede all our autumnal bearing raspberries; this is called the Large-Fruited Monthly Raspberry. I have at this moment, October 25, a bed of these raspberries covered with fruit nearly as large as the Red Antwerp, and on the same plants are green fruit and abundance of blossoms; these were planted in March, and each cane cut down close to the ground; owing to this I had no summer crop, but the young canes commenced bearing towards the end of August, and have ever since been covered with fruit. From every bud a lateral shoot is produced, which in succession give their fruit, and the plant soon assumes a conical shape; or perhaps it will be better described by saying that it is like a small spruce fir, with regular tiers of fruit-bearing branches. To obtain a summer as well as an autumnal crop, the canes, all but one, may be cut down close to the ground; this single cane will produce a crop in July, and those cut down will produce abundantly in autumn. I regret to say that my limited stock will not, I fear, allow me to send out plants this season.

I have an idea that potted plants, well attended to, by giving them liquid manure, might, by having them placed under glass with a gentle heat, be made to give their fruit till late in December.

VAN HOUTTE'S NEW PHLOXES.—Among the many gay flowers which, at present, add so much to the ornament of our gardens, the *Phloxes* are especially worthy of note, for their pretty clusters or panicles of the most brilliantly shaded blossoms. These charming plants begin to bloom at a time when flowers are yet rare in the garden; thus, in the spring we have the dwarf kinds, such as *P. verna*, *procumbens*, *subulata*, *setacea*, *amena*, which make beautiful borders; while in July and September there are the taller varieties, which display, in the midst of the flower beds, the brilliant corollas.

M. VAN HOUTTE, of Ghent, to whom we owe the beautiful variety which bears his name, (*Phlox Van Houtte*), has succeeded in raising four other fine kinds. They are—1st, *Phlox* "Standard of Perfection," with bi-coloured flowers, of white and cobalt blue, and arranged in magnificent pyramids; 2d, *P. Goethe*, of a pure white, dashed with ash-coloured lilac; 3d, *P. Reine Louise*, pure white,

regularly and neatly striped with delicate ashes-of-rose colour; 4th,—this, in allusion, no doubt, to the subtle and delicate *esprit* of our great diplomatist, M. VAN HOUTTE has named *P. Talleyrand*, a variety to which it is impossible to assign any fixed character; the flowers are shaded in white and rose; sometimes striped, dashed, &c., on the same stem. These four new varieties will, ere long, enrich our already fine collections, for which we are, in a great measure, indebted to the skilful Belgian horticulturist.—*Revue Horticole*.

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MARGUERITE D'ANJOU ROSE.—In giving, last year, in the October number of this journal, a description of the *Glorie d'Angers* rose, obtained by M. BOYAU, horticulturist, I said that we should have, this year, another variety not less remarkable. And this opinion has been confirmed by all horticultural amateurs who have seen the *Marguerite d'Anjou* rose; sister to the *Glorie d'Angers*, and offspring of *Edward Jesse*. Of three kinds

raised from seed, two proved to be roses of the first merit.

This new rose is a *hybrid perpetual* (remontante,) but seems, nevertheless, to bear some analogy to the *Ile de Bourbon* roses. It is very fragrant, of a good habit, very double, and the petals finely imbricated, (overlaid.) It is nearly two inches in diameter. The colouring is brilliant,—a fine satiny-rose colour; the outer leaves are of a fine shade of gray (gris de lin) on the surface, and become white on the lower part of the petal. The divisions of the calyx are lightly furnished with thorns, and are sometimes leafy. The ovary is conical at the base, and slightly swelled. The branches are quite vigorous, and almost without thorns; the leaves abundant, and of a bright green. The whole forms a fine well shaped bush. It blooms abundantly, is perpetual, and the flowers are disposed in threes and fives on the same stem or bunch.

It will be offered for sale on the first of November next. *Baptiste Desportes*. *Angers*, in *Revue Horticole*.

DOMESTIC NOTICES.

RULES OF AMERICAN POMOLOGY—as adopted by the Horticultural Societies of MASSACHUSETTS, PENNSYLVANIA, CINCINNATI, ST. LOUIS, ALBANY AND RENSSELAER, NEW-HAVEN, and by the OHIO STATE FRUIT COMMITTEE, and the NEW-HAVEN POMOLOGICAL SOCIETY.

[We re-publish the following *corrected* copy of these rules, which were intended to follow our remarks in the March No., p. 436, but were crowded out. ED.]

1. No new Seedling Fruit shall be entitled to a name, or to pomological recommendation, which is not at least equal to any similar varieties of the first rank already known; or which, if only of second rate flavor, is so decidedly superior in vigor, hardness, or productiveness, to varieties of the same character already known, as to render it well worthy of cultivation.

2. The originator, first grower, or he who first makes known a new Native variety of merit, shall be entitled to suggest a name for such variety; which name, if a suitable one, (i. e., coming within the rules of nomenclature,) shall be adopted by the writer describing the fruit for the first time. But if the name proposed is inappropriate, or does not come within the rules, then the describer shall be at liberty to give a name.

3. No new Native Fruit shall be considered as named until the same has been accurately described, in pomological terms, by some competent person conversant with existing varieties; some Pomologist of reputation, or the Standing Fruit Committee of some established Horticultural Society.

4. The description shall embrace the following particulars:—The size, form, and exterior colour; the texture and colour of the flesh; the flavor and time of ripening of the fruit, with the addition, in Stone Fruits, of the size of the stone, adherence or

non-adherence of the flesh, form of the suture, and the hollow at the stem; and in Kernel Fruits, of the size of the core and seeds, the length, position, and insertion of the stalk, and form of the eye. In Peaches, the form of the leaf glands, and size of blossoms. In Grapes, the form of the bunches; and in Strawberries, the character of the blossoms, whether staminate or pistillate: and also where there is any marked character in the foliage, growth of the young wood, or bearing tree, the same shall be given.

5. The name of the new variety shall not be considered as established until the description shall have been published in at least one horticultural or one agricultural journal, or some pomological work of large circulation and acknowledged standard character.

6. In giving names to newly originated varieties, all harsh, vulgar, or inelegant names shall be avoided, such as "Sheepnose," "Hogpen," &c.

7. No new names shall be given, which consist of more than two words, excepting only when the originator's name is added. [Thus all unnecessarily long titles, such as "New Large Black Bigarreau," "Beurre gris d'hiver nouveau," will be avoided.]

8. Characteristic names, or those in some way descriptive of the qualities, origin, or habit of fruit or tree, shall be preferred. They may be either of intrinsic properties, as "Golden Sweeting," "Downer's Late," &c.; or of local origin, as "Newtown Pippin," "Hudson Gage," of the season of ripening, as "Early Scarlet," "Frost Gage," of the form and colour, as "Golden Drop," "Blue Pearmain," or which commemorate a particular era, place, or person, as "Tippecanoe," "La Grange," "Baldwin," or any other titles which may be significantly applied.

9. Before giving a name to a new fruit, its qualities should be decided by at least two season's experience; and no new fruit can be safely recommended for general cultivation, until the same has been tested and found valuable in more than one locality.

10. When two persons have named or described a new native fruit, then the name and description first published, if according to the rules herein indicated, shall have the priority.

11. No person introducing new fruits from abroad, shall be allowed to rechristen the same, or give them his own name; but shall submit the same to some competent pomologist to ascertain the true name.

12. In deciding the names of fruits already described, the "Catalogue of the London Horticultural Society," shall be considered the standard European authority; and Downing's "Fruits and Fruit Trees of America," the standard American authority.

....
PURCHASE OF MT. VERNON.—We have received from our correspondent, WM. D. BRACKENBRIDGE, Esq., of Washington, a circular entitled—"Documents relating to the proposed purchase of Mount Vernon by the citizens of the United States, in order that they may at all times have a legal and indisputable right to visit the grounds, mansion and tomb of WASHINGTON."

Mount Vernon is a spot endeared by associations, the most sacred and the most profound to the heart of every American. Up to this time, it has remained in the possession of the Washington family, and is now the property of Mrs. JANE C. WASHINGTON. It remains very much in the same condition, as respects buildings, trees, and grounds, as when left by its first distinguished possessor; but the grounds and the buildings have long shown evidences of decay and dilapidation, greatly to be deplored. It is, therefore, most strongly to be desired, that this estate should become *public property*; that it should be restored to, and kept in the best condition; that, in short, it should forever remain a monument—at once the most touching, and the most beautiful of all monuments, to the memory of the great and good man, whose private feelings and domestic sympathies—wherever his public duties called him—were always centered in this, his beloved Mount Vernon.

From this circular, we gather that a correspondence has been carried on between the present possessor of Mount Vernon and the Hon. Mr. DALLAS, and a number of distinguished senators; the result of which, is that the estate is offered to the public for \$100,000 in U. S. six per cent. stock. In order to carry out the plan based upon this, the following Memorial is being circulated, to petition Congress to appropriate the necessary sum:

"MEMORIAL OF AMERICAN CITIZENS, praying that MOUNT VERNON may become the property of the United States, in order that the MANSION and favorite GROUNDS of WASHINGTON, with the TOMB containing his sacred REMAINS, may be kept in a suitable and proper state of preservation, and no longer left subject to the uncertainties and transfers of *private estates*; and that they and their posterity may have a legal and indisputable right to visit, without restraint, that place,

hallowed, as it is, by every patriotic association and emotion that enchain the hearts of Americans.

"To the honorable the Senate and House of Representatives of the United States of America in Congress Assembled.

"Your memorialists, citizens of the United States, living in the full enjoyment of the priceless liberties, mainly achieved by the indefatigable and unrequited services of Washington, respectfully represent; that it is their fervent wish and sincere desire to see, without further delay, the requisite appropriation made, and the necessary measures taken, by your honorable bodies, to purchase 'one hundred and fifty acres of Mount Vernon, lying between parallel lines, and extending from the Potomac river to the Alexandria road, so as to include the buildings, grounds and tomb of Washington, agreeably to the terms specified in a letter from John A. Washington, Esq., to Hon. G. M. DALLAS, vice president of the United States, Hon. JNO. W. DAVIS, late speaker of the United States House of Representatives, Hon. REVERDY JOHNSON, Hon. J. T. MOREHEAD, United States senators, and others, dated at Mount Vernon, December 22, 1846, and naming the sum of one hundred thousand dollars in U. S. six per cent. stock, as the satisfaction for which said invaluable premises will be transferred to the General Government by the present proprietress, Mrs. JANE C. WASHINGTON.

"Your memorialists further represent, that in common with their fellow citizens, they entertain the most profound reverence and veneration for everything connected with the memory of the 'Saviour of America;' and that by consummating the aforesaid purchase, the slanderous charge, accusing republics of being invariably ungrateful, will be refuted, and a small instalment made towards liquidating a portion of the debt of gratitude due to his memory from the favored citizens of this country.

"They therefore request that action may be promptly taken to carry out and consummate the object set forth in this memorial, that they and their descendants may enjoy the right and privilege of visiting, unrestrictedly, the venerated GROUNDS, MANSION, and SEPULCHRE of WASHINGTON, which, at present, are liable to the various casualties, uncertainties and transfers attendant upon all private property in the absence of laws of entailment and primogeniture.

"All which is respectfully submitted."

We hope this movement will be entered into by all good patriots throughout the country. There is no spot in the world which will hold so high a place in the affections of after ages as Mount Vernon; consecrated by the moral labors, the serene enjoyments, the life, the death, and the grave of WASHINGTON.

Our correspondent informs us, that if the plan is carried out, it is proposed to make in the park at Mount Vernon a complete collection of American trees. This would increase the interest of the grounds. The great point, it appears to us, however, would be to restore, maintain, and carry out, as far as possible, the condition of the estate as planned and desired by its great owner.

MAGNESIAN LIME INJURIOUS, ETC.—I have been a deeply interested reader of thy journal, and have studied, with particular interest, those articles on manures in the late numbers, particularly the leader in the January number, and the one on "Special Manures for Fruit Trees," in the last. But where is the point of safety, to a learner, when the masters in fruit culture disagree? A few days since I had the pleasure of a talk with the intelligent president of our horticultural society, JONATHAN BALDWIN; in the course of which, he remarked, "whatever you do, don't lime your apple orchard; for it is certain death to your prospect of fruit;" and, to fortify his declaration, he referred to several orchards which had been ruined by the use of lime.

I believe he spoke without making any exceptions to the bad effects of lime; still, he may have overlooked one fact, which possibly will reconcile all apparent differences, for explanations of which, has been the chief motive of my writing. His farm is a fine productive one in the "Great Valley;" soil, a rich, deep, mellow loam, overlaying immense beds of limestone, of quality, if I mistake not, very highly impregnated with magnesia. In regard to magnesia, it abounds in the lime of some portions of this valley, while in other portions very little can be detected. These considerations suggest two inquiries, viz.:

1st. How are the mass of us, unscientific farmers, to decide where it will do to apply lime to orchards, when we are told that its application does so much for the apple on the "Pelham farm" and other localities,—while it works destruction in other situations?

2d. Why is magnesian lime, or lime highly charged with it, less adapted to the wants of the apple, than lime less marked with its presence?

I am much obliged for thy answers to some of my queries in the last number, and thought them very satisfactory; since which, however, I have had *opposite counsel on one point*. I have just received a letter from a distinguished cultivator of New-York state, of whom I had also made the inquiry; and his counsel is, not to remove the stock until the bud has taken, in "spring budding." [By cutting off the stock, we did not mean to cut it close down to the inserted bud. Cut it *one or two buds* above; leaving those buds to help draw up the sap till the new bud has taken. Ed.]

One or two matters further. I have been not a little surprised, that in thy "Fruits and Fruit Trees" no notice has been taken of several varieties of the apple, widely disseminated in this state; or that some of our pomologists have not brought them to the notice of the readers of the Horticulturist.

There are the *Knowle*, *Early Redstreak*, and *Caleb* apples, highly valued here, either because they are good early varieties, or there is nothing better to contrast them with.

The *Gibbons Smathehouse*, an autumn apple, as popular in the eastern counties of this state as the Porter seems to be in New-England. Then, there is *Smith's Cider*, a popular market, winter fruit; the *Tulpehacken*, or *Pound* apple, large and fine, much resembling the Fallwater both in tree and fruit; the Indian apple and Betsey's Fancy, (or White Vandevere,) both highly productive and

great keeping varieties. These last, although decidedly fine, are as yet but little disseminated.

J. BALDWIN informed me, that so fine were some specimen Smathehouse considered, which he exhibited last autumn at the horticultural meeting in Philadelphia, that they were boxed up and sent to some of the friends in Boston for their opinion and judgment. [Shall be glad to receive specimens of these fruits. Ed.]

I am delighted with thy leading article in the last number on "School-Houses." It has more than a surface significance; which an inattentive or careless reading might not detect. It is profoundly philosophical, and instils a loftiness of sentiment which, if lived out practically, would make our country, in truth, a land of liberty. Thine respectfully. *J. F. Chester co., Pa., March 12th, 1848.*

REMARKS—MR. BALDWIN'S opinion, so adverse to the almost universal testimony of those who have used lime for apple orchards, is easily explained, if he or his neighbors have been in the habit of employing *magnesian*-lime upon their land.

This, as we have ourselves found by experiment, is decidedly injurious to many kinds of vegetation. The reason is supposed to be this: When a limestone, containing much magnesia, is burned, the lime, very speedily after exposure, loses its caustic property, and becomes a *carbonate*, in which state it is a beneficial manure. But magnesia does not readily become a carbonate, and retains its caustic quality for a long time, (absorbing carbonic acid very slowly;) and is thus injurious to vegetation, when it is mixed and applied with lime, which itself is completely air-slaked (i. e., *carbonate* of lime,) and beneficial.

It will be remembered, that in our last we recommended *oyster-shell lime*, as always pure, and cautioned our readers against *magnesia*. Most of our limestones contain very little magnesia, and are excellent manures,—but there are exceptions; as some of the Trenton limestone, in this state, has been analyzed, and found to contain 24 per cent. of magnesia. This would be highly injurious to orchards.

As most of our states have been geologically surveyed, the analyses of the different limestones will be found in their geological reports; and if a farmer is about to use a lime, which has not been tried and found serviceable as manure, it would be well for him to ascertain by reference to such reports if the lime is free from magnesia; (that is, does not contain more than 6 or 8 per cent.) As a common test, we may mention that magnesian limestones feel soft to the touch, will not scratch glass readily, dissolve *slowly* in acids, and leave a *creamy* solution.

As confirmatory of Mr. PELL'S practice in liming highly, to grow so successfully that rather difficult apple—the *Newtown Pippin*, we may quote the following note, sent us by Prof. KIRKLAND of Cleveland, one of the first pomologists in the west:

"*Newtown Pippin*.—Trees thrive well only on very rich soil, containing lime. On soils destitute of lime, a bushel or two should be spread over the ground under the tree; and some animal manure should be added. It will well repay the expense and trouble."

NEWARK CIDER ORCHARDS.—We learn from a fruit grower, who has just been in the neighborhood of Newark, N. J., once so celebrated for its large production of the finest cider, that many of the orchards of their favorite apple, the *Harrison*, have almost entirely failed to yield good fruit within the last few years. The trees are yet apparently healthy, but they bear but small crops; and the apples are small, knotty and imperfect. He also observed, that it was the opinion of many orchardists there that this variety was on the decline.

We believe the cause of the late unproductiveness of these Harrison orchards is very easily explained. The trees, mostly planted in a light soil that has long been cultivated, have exhausted so much of the lime and potash from the soil where they are growing, that there is no longer enough of these substances in the soil to supply the necessary materials for the production of large crops of fair fruit as heretofore. If the orchardists there will give their orchards a heavy top-dressing of pure lime and ashes, we think they will find them speedily returning to a sound and productive state. Those who doubt may first try the experiment on a small scale immediately, by applying a bushel of pure lime and a bushel of leached ashes to every full grown bearing tree,—spreading over an area of surface as large as the branches cover, and digging it under the surface two or three inches. These extensive orchards have hitherto been a source of large income to the proprietors; and it is, doubtless, only their soil, and not the sort of apples cultivated, which has “run out.”

.....
TRANSACTIONS OF THE OHIO FRUIT CONVENTION.—This is an interesting pamphlet of 46 pages, giving a detailed account of the nurserymen and fruit growers' convention, held at Columbus in September last.

This convention assembled chiefly for the sake of comparing fruits from different portions of the state, ascertaining the correct names of many misnamed varieties, making known valuable new fruits, and adding, as far as possible, to the stock of knowledge on this subject. Mr. C. SPRINGER, of Muskingum, was called to preside, and Messrs. ELLIOTT of Cleveland, and BATEHAM of Columbus, appointed secretaries. The sitting commenced by their passing the following resolution:

Resolved, That in classifying the various fruits brought to this convention, we adopt the book known as the “Fruits and Fruit Trees of America, by A. J. Downing;” and that we recommend to cultivators the adoption of this authority as the best hitherto published.

The report, drawn up, we believe, by Mr. ELLIOTT, is full of interesting pomological facts,—especially, however, of local value; and is illustrated by several outlines of the new fruits presented. Apples formed the larger part of the exhibition; and their merits are chiefly discussed in this report. We select a few details, which will interest our readers generally.

“*Summer Rose Apple*. Mr. Elliot regarded it as the apple, if only one summer apple was to be had, and that no private garden should be without it. It is a long time in eating.”

“*Belmont, Waxen or Late.*” Considerable testimony is given to prove that Dr. KIRTLAND was in error in considering this fruit as the *Waxen* apple of Coxe. (See our work—*Waxen Apple*.) On the other hand, in a copy of our *Fruits*, sent us lately by Professor K., we find the following note on this fruit:—“After all that has been published by Mr. SPRINGER, we believe our statement, as to the origin of this fruit, to have been correct. It was NESBY'S statement, made to Judge CARRAD about the year 1806. That it is the *Waxen* apple, was a suggestion of COXE'S father to me in 1824, while I was in Burlington, N. J.” After this decided difference of opinion, the two fruits must be compared; and there will, perhaps, be an opportunity of bringing them together the coming season. We may add, regarding its merits, the following from this report:—“the unanimous expression of all the convention was such as to class this a variety to be desired in every collection; being, in all sections, first rate.”

“*Newtown Pippin*. Messrs. LATHAM, WOOD, and others remarked, that ‘this variety was fine on a limestone clay soil; but on sandy soil, poor.’ Mr. ELLIOTT remarked, that it was always inferior on sandy soil, and good in a rich deep clay soil. To have perfect success with it, *lime*, in a soluble state, is wanted, so that the roots can take it up.”

“*Putnam Russet*. A large number of specimens of this fruit, and also of the *Roxbury Russet*, were exhibited and compared, and various letters read regarding the origin of the variety, &c.; and ‘there was not a dissenting voice,’ that this fruit and the *Roxbury Russet* are identical;” (as we stated our opinion to be, on first comparing the two a year ago.)

“*Priestly vs. Bartlett Apple*. Mr. ELLIOTT is under some error regarding this latter name, in quoting us as authority; as we are not acquainted with any apple bearing the latter title. Perhaps it is a typographical error.

“*Baldwin*. It is quite remarkable that this apple, so hardy, productive and popular here and in New-England should, upon the Reserve lands of Ohio, fall from the “bitter rot.”

“*Rawles' Jannet*. “Is highly productive, and is becoming very popular along the valley of the Ohio.” Mr. ALLEN, of Ky., thinks it “unsuited to the north, as it requires the longest season of a southern climate to mature fully.”

“*Nonsuch*. (Old *Nonsuch*, of Mass., *Red Canada*, of western N. Y.) “It is much grown in counties near Cleveland; is one of the *most valuable* of apples,—large, fair, handsome, juicy, rich, tender, great keeper, good bearer; decidedly among the very best of apples.”

Among the new apples described, and highly recommended, are the following: *Early Pennock*, *Willow*, *Springer's Seedling*, *Well's Apple*, *Red Ashmore*, *Western Spy*, *Phillip's Sweeting*, and *Pryor's Late Red*.

The convention closed by forming a *State Fruit Committee*, to meet annually, and by adopting the *Rules of American Pomology*, as passed by the Massachusetts and other horticultural societies.

Altogether, this first convention has evidently been productive of much good in Ohio; and there are

many interesting pomological facts in this report which we have not space to notice, but recommend the pamphlet (which may be had at the office of the *Ohio Cultivator*,) to the notice of pomologists, and especially to western fruit growers.

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HORTICULTURAL DINNER AT BUFFALO.—The president of the Buffalo Horticultural Society, WM. R. COPPOCK, Esq., entertained a large party of horticulturists, from various portions of the state, at his residence in Buffalo on the 1st of March. After dinner, the guests resolved themselves into a kind of *home pomological convention*, and sat in judgment upon the various productions of the garden, which were brought from various localities for that purpose. About seventy varieties of apples—many of them of the best standard varieties—were exhibited, tasted, and their popularity tested by a vote. Messrs. ELWANGER & BARRY, of Rochester, presented 27 varieties. Mr. WATTS, of Rochester, 15 varieties, and several others a smaller number of sorts. "The *Esopus Spitzenburgh*" was—as we learn by the Western Literary Messenger, by a preliminary vote, *unanimously* decided, taking into consideration all its qualities, the *ne plus ultra* of apples; and as the specimens approximated in excellence to that variety, they stood, in the judgment of the company. Among those rated "No. 1," we find Baldwin, Newtown Pippin, Swaar, Vandevere, Northern Spy, Golden Russet, Roxbury Russet, Herefordshire Pearmain, Pomme Gris, Yellow Belleflower, Westfield Seek-no-further, Pownall Spitzenburgh, and Rhode-Island Greening, (the latter it was remarked, "does not always hold, in western New-York, the colour and high flavor of the land of its origin.") Still, it is a very popular apple, and passed as No. 1 by a *bare* majority.) A very fine new apple, classed No. 1, was presented by Mr. EATON, and called the *Eaton apple*.

Specimens of the *Buffalo seedling Pinkeye potatoes*, from the originator, Rev. N. S. SMITH, of Buffalo, "were served up at dinner, and found to be unsurpassed in quality."

L. F. ALLEN, Esq., president of the State Agricultural Society, presented some excellent "Stilton" cheese, made by Mr. H. Parsons, of Canada West.

Altogether, Professor COPPOCK's horticultural dinner was, we learn, a most agreeable one; and serves, among other indications, to show how the gardening interest is making progress in western New-York.

.....
HORTICULTURE IN ALABAMA.—Nothing gives one a more definite idea of the extent and variety of soil and climate of our Union than a comparison, at this season of the year, of accounts of the season in different parts of the country. For example, we have to-day received letters from Maine and New-Hampshire speaking of snow, and two feet of frost in the ground there, while the following extract from the letter of a zealous amateur in Mobile, dated *March 10th*, speaks of a *crop of young peas*, and shoots 8 or 10 inches long already.

"I think the climate and soil here will do very well for pears, on either pear or quince stocks. I have about 500 young trees planted, embracing

nearly all the finest varieties; over 200 of them are on quince stocks; these latter show, at this time, a fine new growth of from 8 to 10 inches, and some of the trees have young pears upon them, now going on finely. I suppose this sounds strangely to northern ears, where I presume all fruit trees still have the look of drear winter.

"I have in my young orchards about 60 plum trees, 160 cherry, 100 apricots, and about 1400 peach and nectarine trees, besides some of all the other fruit trees; and I am resolved to give them a fair trial. I have also about 250 apple trees, among which are 12 of "*Early Joe's*;" these latter I had from ELWANGER & BARRY of Rochester, N. Y., with 100 pears on quince stocks; and *every tree* is living and doing well.

"I have some doubts regarding the success of plums, cherries, and apricots here. The northern peach trees do very well here; and, although they are transferred to this warm climate, some of *their northern habits stick very closely to them*. They bloom at least from two to three weeks later every spring than our native peach trees, which almost entirely preserves them from the spring frosts." Your friend, R. H. *Mobile, Ala., March 10, 1848.*

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HORTICULTURE IN MISSOURI.—The St. Louis Horticultural Society, judging from reports of its meetings which reach us, is already exerting an admirable influence in that state. The report of the premiums for 1848, made at the meeting of Jan. 8th, and of the proceedings at that time, is highly creditable to the society. The culture of vineyards, and the production of excellent light wines, appears fast becoming a matter of importance there as well as at Cincinnati. Three specimens of "Catawba wine" were exhibited at the meeting. Specimens of wine were presented by Mr. MALLINKRODT, made from both Ohio and the Catawba grapes: "the wine of the Ohio grape resembled Claret,—that from the Catawba, the best Hock." We observe that the society offers, this year, a premium of \$30 for the best gallon of native wine, and \$20 for the second best; evidence to be given that not less than a barrel of the same quality has been produced.

A very spirited address was made by President THOMAS ALLEN, Esq., from which we quote the following interesting extract; premising the growth of the finest vegetables at St. Louis, especially melons, etc., *almost* without cultivation, surpasses what is produced in England with the greatest skill of the gardener, and with a lavish outlay of money:

"There are very few vegetables or melons, desirable for the table, which do not succeed well here, in the natural unexhausted soil, with even the most ordinary cultivation. The soil, however, would be a rare exception to the general character of the surface of the globe, did it not require, at length, a return of some of the elements we take from it. Vegetable physiology and chemistry, with the light of the wonderful discoveries made, of late,

* An interesting fact, which we beg our correspondent in Ohio, who doubts the influence of one climate on varieties having their origin in another, to make a note of. Ed.

in those branches of science, will enable us to determine what those elements are, and how to apply them; so that, when the necessity arises, we may, perhaps, be able to feed and fatten, as it were, our vegetables as we do our cattle. But, at the present, our vegetable family does not seem to require the especial attention of associated effort; and some of our members would, probably, be inclined to deride an offer of a general premium list for vegetables, as being nearly as supererogatory as offering a reward for spontaneous productions. Among such productions, there would seem to be no demand for a horticultural society; as such institutions thrive most vigorously where nature is the most reluctant. Amid the polders of Flanders, the highlands of Scotland, or the bleak coasts of Massachusetts, we have conspicuous examples.

"There are subjects enough, however, even in this prolific country, to occupy our attention, demanding investigation and experiment, and worthy of discussion. Highly favored as we are, yet we are not sufficiently so to be afforded any excuse for indolence. Horticulture, in its highest sense, demands more knowledge than simple agriculture. We have to deal with a greater variety of objects and elements, and in a more minute degree; and it would be reprehensible in us to remain behind the great improvements, and ignorant of the wonderful discoveries, which are exciting the attention of the world. There are good reasons, therefore, for both mental and physical industry. Fruits will not grow spontaneously, or without care. And if there are those who are of a contrary opinion, and, carelessly thrusting their trees in the ground, think they have nothing more to do but to pluck their fruit, as it ripens, they will return from their contemplated harvest some day, convinced of their mistake. They will find their apple trees and quinces cankered and bored—their pear trees blighted—their heart cherries all dead—their peach trees eaten by worms—their plums, apricots and nectarines all fallen before they were ripe—their gooseberries mildewed—their grapes rotted on the vine. Then they will wonder what can be the causes, and what the preventives, of all these disastrous results; and will, perhaps, inquire, whether they know anything about them up at the horticultural society? And such inquiries it is proper for us to be prepared to answer. We should prosecute our experiments and investigations, and continue our discussions, until we are thus prepared. Let the experiments go on in the field, and discussion at our monthly meetings. Let us aim at the highest degree of perfection. Discarding and uprooting all the meaner sorts, let us have none but the best. Let us cull the old orchards, plant new ones, plant vineyards, make wine, and adorn our gardens and lawns with the noblest products of the forest, and with the choicest shrubbery and flowers; so that it may be said of us, as of Pomona,

'None taught the trees a nobler race to bear,
Or more improved the vegetable care.'

"We have not to look to the old world, nor to the older states, exclusively. Some of the products of our own woods and prairies are among their favorite objects of domestic culture. The best wine

grapes, for American cultivation, it seems likely to be acknowledged, are derived from the native wilds of our country. Some favorite plums, always resisting the curculio, and always full bearers, are also indigenous here. We live upon the borders of vast botanical fields, yet almost unexplored. It may be ours, therefore, to discover and introduce new and valuable sorts. New and superior varieties will continue to come into existence by hybridizing and planting. And we shall ultimately settle upon ample varieties that are best suited to our soil and climate. A list of these varieties ought to be commenced by our fruit committee, and enlarged as experience may justify. And individuals should be invited to bring to our notice any new fruit of respectable quality, found springing from seed casually dropped, or discovered in the forests.

"Thus carrying forward our action into all the various ramifications of horticultural art, we shall be most acceptably and usefully fulfilling the object of our institution. We shall see, gradually, a new and more refined taste excited, which shall have an ameliorating and domesticating effect upon the hearts of those who imbibe it; exhibiting itself in attachment to contented homes and moral habits; in discrimination between beautiful plants and ordinary weeds; between choice fruit and the meaner sorts; between ugly shade trees, and those of beautiful forms and cleanly habits; between dwellings of mere bricks and mortar, bleak and desolate, and those which show at once, by their sites and their embellishments, that they are the abodes of the refined and the happy. We shall thus contribute to the ultimate beauty, health and happiness of our city, by encouraging the reservation of public squares, and the planting of suitable trees for shade and ornament; by improving the markets; by inducing a taste for rural architecture and decoration in the suburbs; and even the public cemeteries, instead of being merely the cold, repulsive and deserted abodes of the dead, shall invite us to their 'paths of pleasantness and peace,' where sweet memories of the departed shall be mingled with the songs of birds and the perfumes of flowers.

"In these agreeable pursuits, lending our small contributions to promote the general happiness, we are also working out for ourselves the reward of contented homes, serene tempers, healthy bodies, long lives, and public respect. We are moored in that haven to which all men, at one time or other of their lives, seem instinctively to long for, and to which warriors and politicians, satiated with honors, and professional men and merchants, cloyed with wealth, or tired and sick of more busy scenes, would all fain retire. Let us, therefore, not only be contented, but glory in that mode of life, which has been 'the inclination of kings and the choice of philosophers,' and rejoice, that ours is that

'place,
Chosen by the Sov'reign Planter, when he fram'd
All things for Man's delightful use.'"

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THE PEAR BLIGHT AT ALBANY.—In your comments on my letter, in the last *Horticulturist*, treating of the pear tree blight, you refer me to Dr. Harris' article on insect-blight, to enable me more accurately to judge how far insects must be held ac-

countable for the blight in my trees. I think I am pretty well acquainted with the habits and customs of the *Scolytus pyri*, and I know pretty well, too, how much of the disease to give them credit for; and I am certainly not a little surprised that you should have given me that reference, with my four cases before you. To combat Mr. Ernst's position, that "the idea is mostly abandoned that any form of blight is caused by insects," I did not choose to refer him to the ravages of the *Scolytus pyri*, for you had done that in the December number; but I undertook to inform him, and others, that there was another insect at work, destroying our trees, and I referred to the four cases to prove it. That I discovered the insects on the Bartlett limb only, is true! but from evidence satisfactory to my mind,—as the peculiar appearance which the disease induces being apparent on the small end of the limb on which the vermin were—the presence of the nauseous odor which the blight affected limbs always have—when the end of the stem was cut off, and the same odor being very strong when the vermin were crushed between the fingers—I am convinced that that species of vermin stung, and injected a poison into the tender young wood of all the cases noted. Those cases, in my opinion, could no more have been caused by *Scolytus pyri*, (which lays its eggs one year, and the effects of which—after its transformation into grubs and beetles—is not seen until the next,) than by either frozen or scalded sap; for you must remember, that it was on the extreme end of the new shoots that the disease was first seen. It may be asked—if the species of insect, noticed on the Bartlett branch, poisoned the three first trees noted, why were the vermin not seen on those trees? To this I would reply,—the small size and the shy habit of the animal is probably one reason; and another,—being unsuspecting of such cause, the trees were not examined very early, in the cool of the morning, when they might have been found chilled, as they were on the Bartlett tree.

To my mind, you do not satisfactorily answer the question, of—"why is it that trees of a bearing age, as a general rule, are the only ones affected by the disease, which first shows itself on the body of a large branch, or the trunk of a tree?" You say, that "a mild winter, with sudden changes, is more fatal to a tender-barked tree than one of uniform low temperature." That, I will not dispute; but to my mind, it does not account for the peculiar effect of this disease on the older, in preference to the younger trees; for adjoining, and indiscriminately mixed among the large diseased trees, were small ones—ten to one—not at all affected by any other disease than that caused by the insect alluded to above. The fact, too, that you have seen hundreds of young two year old trees killed down to the ground by what you denominate frozen sap-blight, does not, to me, any more satisfactorily account for it. I am quite well aware, as I informed you in my last,—for I have had numerous cases,—that the young trees are frequently, as it were, burned black by the effect of a hot sun on the frozen bark,—but this is not the blight alluded to; this effect is noticed at the time; that peculiar disease never, until the tree is in leaf, as far as my observation goes. Again, the bark of the young tree, when injured, never puts

on the peculiar appearance that the diseased bark of the older tree does; the bark of the young tree appears black and shrunken immediately; but that of the older one goes through regular stages of disease.

You say that your observation leads you to coincide with Mr. ERNST in excepting the Seckel, usually, from its attacks. I certainly hope that the public generally may be able, from experience, to arrive at the same conclusion! You account for the appearance of the disease in my Seckels, by saying that—"When a disease occurs in a neighborhood, in a more than usually malignant form, individuals usually exempt often fall victims to it." Unless you wish us to consider that you intend to be understood as referring this disease to a malignant cause, that axiom will not apply; for if the cause, without being malignant, was so severe as to injure and kill trees not usually liable to its attacks, would it not, in all probability, have attacked all that were usually liable to it also? But such was not the fact. Bloodgoods, Easter Beurre's, Duchesse d'Angoulemes, and many other varieties, were killed or materially injured, while trees of the same varieties, under similar circumstances, in the same rows, only fifteen feet apart, were not at all injured. Seckels were no more exempt with me than any other varieties; and I perceive, by a late Genesee Farmer, that Mr. Barry, its horticultural editor, has had like experience. I am certainly sorry that we cannot except Seckels here from the disease! And I only mention the fact to guard growers of the pear; for should they, without abundant proof, take it for granted that this variety is exempt from the disease, and go to planting extensively, they might by-and-by suffer loss therefrom.

The fact is, that this particular form of blight—that which first appears on the trunk or body of a large branch—is of a character so peculiar that I do not intend, without further observation, to commit myself to any particular theory for its cause. None of those heretofore advanced are satisfactory to my mind. We can, as yet, only treat the disease as we do epidemics when they come upon us "unseen and unheard;" but we may, by experimenting with limewash or other innocent articles, sooner or later, learn what will prevent its recurrence, (if it is not a malignant epidemic disease,) and consequently infer the cause of it. Yours very truly. Herman Wendell. Albany, February 4, 1848.

P. S. March 6th, 1848.—The only reply which I consider necessary to make to that part of Mr. ERNST's letter, in the last Horticulturist, alluding to my cases, is to refer him to the above article, in which he will perceive, that I attribute the cause of the injury to the two trees mentioned by him, viz., the Bergamot d'Esperen and the Colmar d'Aremberg, to the sting of the vermin there described, and the injection by them of poisonous matter into the tender extremities of the new branches, and not to attacks of the *Scolytus pyri*. H. W.

REMARKS.—DR. WENDELL's observations and opinions, on this subject, are so totally different from our own, that we are unwilling to comment any further upon them. We print his letter above verbatim; and since we have lately stated repeatedly our own views on this disease, we leave the matter

before the public. Cultivators of experience will always test opinions, whether given by our correspondents or ourselves, by their own experience and observation; and on such an unsettled question as the pear blight, there will naturally be some disagreement. Ed.

THE ORCHARDISTS' SAW.—I notice, in the January number of the *Horticulturist*, a description of a new grafting tool. I have myself been planning some improvement, of a similar kind, and am now having made for me an article which I propose to call "The Orchardists' Saw."

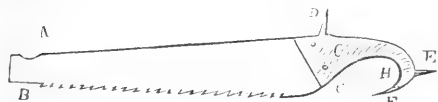


Fig. 57.—The Orchardists' Saw.

This saw is to be used for pruning, and more especially for engrafting. The saw-blade is about one foot long. A, represents a thin curved edge for cutting open the stock, instead of splitting it, as is usually practiced. B, is the place for striking with a hammer, when driving the cutting edge, A, into the stock. C, is the handle of the saw, made entirely of iron. D, is the wedge for holding open the stock when inserting a scion. E, a narrower wedge for small stocks. F, a hook to hang the saw upon a limb of the tree. The wedges, D and E, may be driven with a hammer by striking on the inside of the handle C, at C or H.

It will be perceived that the additions to this saw for engrafting do not in the least interfere with its use for pruning. The curved cutting edge, A, is much better adapted to our wants than any kind of *splitter*, whatever, can be; as it will make a clean smooth cut, through bark and stock, without any bruise or slivers. Indeed, my orchardists' saw seems to me to be "the identical thing;" and, as you say of Mr. Foote's *stock-splitter*, I "generously place the invention at the service of the public." Truly yours, Geo. Jaques. Worcester, Mass., January 10th, 1848.

OSAGE ORANGE, BUCKTHORN, &c.—There are two or three practical matters on which a few hints would be very acceptable to me, and perhaps to some more of your readers.

Is the Osage Orange found sufficiently hardy to endure the winter in most situations, as a hedge plant, as far north as forty degrees?

What is the best season and manner of sowing the seed of the Osage Orange and the Buckthorn?

Also, on raising seedling roses for stocks and the proper season for budding them. Yours respectfully, A Subscriber. Washington, O., Feb. 23, 1848.

ANSWER.—It is impossible to speak definitely respecting the hardness of any plant, as measured by degrees of latitude; for the altitude of the country, the forests, lakes, &c., greatly modify the temperature of particular localities.

But we can give our readers a safer guide, by comparing the hardness of one plant by that of another generally known and cultivated. We say,

then, the *Osage Orange* will be found perfectly hardy as a hedge plant, and make a most efficient hedge, too, wherever the *Isabella grape* grows and matures its fruit well in the open air. We say, as a *hedge plant*, because experience has shown that any tree, somewhat tender, becomes much more hardy when it is forced to make short-wood, and to assume the dwarfish habit of a hedge.

Both the *Osage Orange* and the *Buckthorn* may be sown in the spring or autumn. In the former, soak the seed in hot water twenty minutes before planting them. They are both as easily grown as peas, and may be sown and raised the first year in drills, very much in the same way. Very full and complete directions for raising hedges of both these plants, beginning at the seed bed, will be found in the February No. of the *Horticulturist* for 1847.

The seeds of *roses* should be gathered in the fall, washed clean, and kept in boxes of damp sand in a cellar till spring. They must then be sown in rich light soil. They are budded in July. Ed.

ANNUAL VINES.—Some of your readers who want to cover trellises rapidly, or conceal unsightly objects, may be glad to know what are the best *annual* vines for this purpose. Certainly one of the very best is the *Blue Cobea*, (*Cobea scandens*), which may be had of most of the florists, in the spring, in small pots. Planted in any good, rich soil, this climber will often grow 30 or 40 feet in a season, making quite a display of foliage, and bearing an abundance of large, purplish blossoms, much like those of the *Canterbury bell*. Next, is that old favorite, the *Balsam Pear*. The seeds may be had at the seed-shops; and if planted three or four inches apart, in good soil, about the middle of April, a large trellis, 15 or more feet high, may be covered by midsummer; and in the autumn there are few things more curious or ornamental than the singular fruit of this vine, which bursts open of itself when ripe, and displays a rich orange centre.

The *scarlet* flowered morning glory, with neat foliage and small bright blossoms, like those of the *Cypress vine*, is the prettiest of all the convolvulus tribe that are easily grown from seeds. I ought not to forget the *Purple Maurandia* (*M. Barclayana*), a perennial vine that may be had at the green-houses; and which, put out in the border with a little frame to which to attach its tendrils, will be loaded with its fine, rich, purple, foxglove-like blossoms every day in the growing season. There is a species, also, with *pink* blossoms, (*M. lophospermum*), more vigorous in its habit; "Sweet Peas," every body is familiar with. Round a cottager's house, I like nothing so well as to see the *hop-vine* running over a rustic arbor; and the prettiest and gayest of cottage annual vines is the *scarlet-runner*, (bean,) which gives at once pretty effect and plenty of good food. *Ipomea Learii*; this large, deep blue convolvulus has now become common enough to be afforded cheaply at this season in the year in pots; and there are few climbing plants which equal it in splendor, every morning, from midsummer to November. It grows in rich soil amazingly fast. An Amateur Florist. New-York, March, 1848.

SALVIA PATENS.—This *Salvia*, with large flowers of the finest *ultramarine blue* perhaps to be found in the vegetable kingdom, is a very fine plant for budding-out, to form a mass of colour in the flower garden. By pegging down the shoots as they grow, the dwarfish compact habit will be attained, so necessary to good effect in flower gardens arranged in this way. Yours, *An Amateur Florist*. New-York, March, 1848.

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CULTURE OF THE BLUE COMMELINA.—(*Commelina celestris*.)—This is one of the loveliest of all blue flowers; and I am surprised, considering its easy culture, that it is not more frequently seen in our flower gardens.

It is properly a tuberous perennial,—each plant with a cluster of tubers like those of the dahlia in miniature. These tubers are as easily preserved as those of the dahlia; and when the roots get large, the plants put out in May in the open border, and produce an uninterrupted series of flowers the whole summer and autumn.

The *Commelina* is so easily raised from seeds, (which may be had of all our leading seedsmen,) that any person may soon get a good stock of it. Besides, if sown pretty early, say the middle of April, in a warm border, it comes into bloom like an annual the same summer. It may then be taken up at the commencement of frost, and the roots put away in a box or pot of sand, or coal ashes, and placed under the green-house stage, or in a cellar free from frost. *Ibid.*

.....
THE GLADIOLUS.—This is one of the finest bulbs in the world for the open border in this country. The common *Gladiolus*, or "sword lily," (*G. communis*;) with purple flowers, and the green striped, or Parrot *Gladiolus*, (*G. psittacina*;) are well known hardy border flowers. But the finer new hybrid species and varieties, so well known in Belgium, (where they cultivate above 40 sorts,) are very seldom seen in the United States, except in the gardens of the largest collectors.

They are well worthy of more attention. The roots of these new sorts are very easily preserved through the winter in a cellar or green-house; and nothing can well be more gay, brilliant or delicate than the colours of many of the finer sorts,—*G. cardinalis*, *gardavensis*, *roseus*, etc., with all the shades of flesh colour, rose, pink, deep scarlet and purple, in their long spikes of blossoms. They also come into bloom at midsummer, when there are, comparatively, few flowers in our borders. Good, rich, sandy loam, and an open exposure, will, in this climate, grow them to our great satisfaction. *Ibid.*

.....
HARDY AND SHOWY ANNUALS.—A correspondent in Maryland desires a list of hardy and showy an-

nuals "that will grow with little care, and produce a gay effect in the flower garden."

We recommend the following species: *Collinsia bicolor*, *Collinsia grandiflora*, *Phlox Drummondii*, *Nemophila insignis*, *Erysimum Peroffskianum*, *Hibiscus Africanus*, *Schizanthus pinnatus*, *Coreopsis tinctoria*, *Bartonia aurea*, *Portulacca splendens* and *Thellusonii*, *Malope grandiflora*, *Convolvulus minor*, *Gillia tricolor*, *Eutoca viscida*, *Iberis umbellata*, *Alyssum maritimum*. To these may be added the fine Double German Asters, Double Balsams and Double Dwarf Rockets, to be had of most of the seedsmen.

.....
MARTYNIA FRAGRANS.—This is a new annual, well worthy of cultivation. We received some seeds lately from a friend, with the following account of its growth. *Ed.*

It is considered very difficult to raise this annual in England; but here, in our genial sunshine, it grew to a most prodigious size. A young friend in London sent me, last March, a few seeds. Knowing it required active heat in starting, I sowed the few seeds in a pot about St. Patrick's day, and kept them in the dahlia propagating house, in a temperature of about 80°. In about two weeks one seed came forward, (and the only one;) this "lone star" I steadily watched and helped along, with a couple of shiftings into pots, until by the 10th of May it was a strong showy plant. At this time I turned it into the ground, in a rich warm spot, and never did I before see such rapidity of growth, especially in spreading; it sent out lateral branches five feet in length, but never attained more than three feet in height. The whole habit is very robust; the foliage thick, but more soft and velvety than *M. proboscidea*, and flowering, in immense profusion, from the middle of July till stopped by frost in October. No other *Martynia* can compare with this fine variety; the flowers are larger than the *Gloxinia*, which they indeed much resemble, only that they are thickly set on a spike, and are of a delicate rosy lilac, blotched and shaded with bright crimson, with an agreeable odor. I consider it one of the greatest acquisitions to our annuals, which are seldom of any size, and for the most part, of late, the novelties have been of a trifling character. This is a gigantic addition. I have raised from this one plant a fair quantity of seed, which I have sent to Messrs. Thorburn & Co., in John-street. I forgot to say that the seed capsules for a month before ripening add much to the appearance of the plant. When this plant becomes more plentiful, I have no doubt the green pods will make a pickle quite equal to the *M. proboscidea* capsules, which are much used for that purpose by many good housewives. Yours, *T. Astoria, Long-Island.*





THE NORWAY SPRUCE FIR.

Full-grown tree at Studley, 132 ft. high; diam. of the trunk, $6\frac{1}{2}$ ft.; and of the head, 39 ft. [Scale 1 in. to 24 ft.]

[Hort: May, 1848.]

Horticulturist

AND

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"WHAT IS THE REASON," said an intelligent European horticulturist to us lately, "that the Americans employ so few evergreens in their ornamental plantations? Abroad, they are the trees most sought after, most highly prized, and most valued in landscape gardening; and that, too, in countries where the winters are comparatively mild and short. Here, in the northern United States, where this season is both long and severe, and where you have, in your forests, the finest evergreens, they are only sparingly introduced into lawns or pleasure grounds."

Our friend is right. There is a lamentable poverty of evergreens in the grounds of many country places in this country. Our plantations are mostly deciduous; and while there are thousands of persons who plant, in the country, such trashy trees (chiefly fit for towns,) as the aïlanthus, there is not one planter in an hundred but contents himself with a few fir trees, as the sole representatives of the grand and rich foliaged family of evergreens.

They forget that, as summer dies, evergreens form the richest back-ground to the kaleidoscope colouring of the changing autumn leaves; that in winter, they rob the chilly frost-king of his sternest terrors; that

in spring, they give a southern and verdant character to the landscape in the first sunny day, when not even the earliest poplar or willow has burst its buds.

More than this,—to look at the useful as well as the picturesque, they are the body guards—the grenadiers—the outworks and fortifications—which properly defend the house and grounds from the cold winds, and the driving storms, that sweep pitilessly over unprotected places in many parts of the country. Well grown belts of evergreens—pines and firs, which

— "in conic forms arise,

And with a pointed spear divide the skies,"

have, in their congregated strength, a power of shelter and protection that no inexperienced person can possibly understand, without actual experience and the evidence of his own senses. Many a place, almost uninhabitable from the rude blasts of wind that sweep over it, has been rendered comparatively calm and sheltered; many a garden, so exposed that the cultivation of tender trees and plants was almost impossible, has been rendered mild and genial in its climate by the growth of a close shelter, composed of masses and groups of evergreen trees.

Compared with England,—that country

whose parks and pleasure grounds are almost wholly evergreen, because her climate is so wonderfully congenial to their culture that dozens of species grow with the greatest luxuriance there, which neither France, Germany, nor the northern United States will produce; we say, compared with England, the *variety* of evergreens which it is possible for us to cultivate is quite limited. Still, though the variety is less, the general effect that may be produced is the same; and there is no apology for our neglecting, at least, the treasures that lie at our very gates, and by our road-sides—the fine indigenous trees of our country. These are within every one's reach; and even these, if properly introduced, would give a perpetual richness and beauty to our ornamental grounds, of which they are at this time, with partial exceptions, almost destitute.

As we are addressing ourselves, now, chiefly to beginners, or those who have hitherto neglected this branch of arboriculture, we may commence by mentioning, at the outset, *four evergreen trees* worthy of attention—indeed, of almost universal attention, in our ornamental plantations. Those are the *Hemlock*, the *White Pine*, the *Norway Spruce* and the *Balsam Fir*.

We place the Hemlock (*Abies canadensis*) first, as we consider it, beyond all question, the most graceful and beautiful evergreen tree commonly grown in this country. In its wild haunts, by the side of some steep mountain, or on the dark wooded banks of some deep valley, it is most often a grand and picturesque tree; when, as in some parts of the northern states, it covers countless acres of wild forest land, it becomes gloomy and monotonous. Hence, there are few of our readers, unfamiliar as they are with it but in these phases, who have the least idea of its striking beauty

when grown *alone*, in a smooth lawn, its branches extending freely on all sides, and sweeping the ground, its loose spray and full feathery foliage floating freely in the air, and its proportions full of the finest symmetry and harmony. For airy gracefulness, and the absence of that stiffness more or less prevalent in most evergreens, we must be allowed, therefore, to claim the first place for the Hemlock, as a tree for the lawn or park.

Unfortunately, the Hemlock has the reputation of being a difficult tree to transplant; and though we have seen a thousand of them removed with scarcely the loss of half a dozen plants, yet we are bound to confess, that, with the ordinary rude handling of the common gardener, it is often impatient of removal. The truth is, all evergreens are far more tender *in their roots* than deciduous trees. They will not bear that exposure to the sun and air, even for a short period, which seems to have little effect upon most deciduous trees. Once fairly dried and shrivelled, their roots are slow to regain their former vital power, and the plant in consequence dies.

This point well understood and guarded against, the Hemlock is by no means a difficult tree to remove from the nurseries.* When taken from the woods, it is best done with a frozen ball of earth in winter; or, if the soil is sufficiently tenacious, with a damp ball in the spring, as has lately been recommended by one of our correspondents.

Of all the well known Pines, we give the preference to our native WHITE PINE, (*Pinus strobus*), for ornamental purposes. The soft and agreeable hue of its pliant fo-

* In the nurseries this, and other evergreens, over four feet, should be regularly root-pruned; i. e., the longest roots shortened with a spade every year. Treated thus, there is no difficulty whatever in removing trees of ten or twelve feet high.

liage, the excellent form of the tree, and its adaptation to a great variety of soils and sites, are all recommendations not easily overlooked.

Besides, it bears transplanting particularly well; and is, on this account also, more generally seen than any other species in our ornamental plantations. But its especial merit, as an ornamental tree, is the perpetually fine, rich, lively green of its foliage. In the northern states, many evergreens lose their bright colour in mid-winter, owing to the severity of the cold; and though they regain it quickly in the first mild days of spring, yet this temporary *dinginess*, at the season when verdure is rarest and most prized, is, undeniably, a great defect. Both the Hemlock and the White Pine are exceptions. Even in the greatest depression of the thermometer, known to our neighbors on the "disputed boundary" line, we believe the verdure of these trees is the same fine unchanging green. Again, this thin summer growth is of such a soft and lively colour that they are, (unlike some of the other pines, the Red Cedar, etc.,) as pleasant to look upon, even in June, as any fresh and full foliaged deciduous tree, rejoicing in all its full breadth of new summer robes. We place the White Pine, therefore, among the first in the regards of the ornamental planter.

Perhaps the most popular foreign evergreen in this country is the NORWAY SPRUCE, (*Abies excelsa*.) In fact, it is so useful and valuable a tree, that it is destined to become much more popular still. So hardy, that it is used as a *nurse* plant, to break off the wind in exposed sites, and shelter more tender trees in young plantations; so readily adapting itself to any site, that it thrives upon all soils, from light sand, or dry gravel, to deep moist loam or clay; so accommo-

dating in its habits, that it will grow under the shade of other trees, or in the most exposed positions; there is no planter of new places, or improver of old ones, who will not find it necessary to call it in to his assistance. Then, again, the variety of purposes for which this tree may be used is so indefinite. Certainly, there are few trees more strikingly picturesque than a fine Norway Spruce, 40 or 50 years old, towering up from a base of thick branches which droop and fall to the very lawn, and hang off in those depending curves which make it such a favorite with artists. (See our FRONTISPIECE, from *Loudon's Arboretum*.) Any one who wishes ocular demonstration of the truth of this, will do well to *daguerreotype* in his mind, (for certainly, once seen, he can never forget them,) the fine specimens on the lawn at the seat of Col. PERKINS, near Boston; or two or three, still larger, and almost equally well developed, in the old Linnæan Garden of Mr. WINTER, at Flushing, Long Island.

The Norway Spruce, abroad, is thought to grow *rapidly* only on soils somewhat damp. But this is not the case in America. We saw, lately, a young plantation of them of 10 or 12 years growth, in the ground of Capt. FORBES of Milton Hill, near Boston, on very high and dry gravelly soil, many of which made leading shoots, last season, of three or four feet. Their growth may be greatly promoted, as indeed may that of all evergreens, by a liberal top-dressing of ashes, applied early every spring or autumn.

Little seems to be known in the United States, as yet, of the great value of the Norway Spruce for *hedges*. Our intelligent correspondent, Mr. NELSON, has described his experience with it abroad, and pointed out its capital points for this purpose, and the mode of growing it, in a previous page

of this journal, (p. 128.)* We have no doubt whatever, that it will soon become the favorite plant for *evergreen hedges*, as the Buckthorn and Osage Orange are already for deciduous hedges in this country. So hardy as to grow everywhere, so strong and bearing the shears so well as to form an almost impenetrable wall of foliage, it is precisely adapted to thousands of situations in the northern half of the Union, where an unfailling shelter, screen and barrier are wanted at *all seasons*.†

The BALSAM FIR, (*Picea balsamea*), or, as it is often called, the *Balm of Gilead* Fir, is a neat, dark green evergreen tree, perhaps more generally employed for small grounds and plantations than any other by our gardeners. In truth, it is better adapted to small gardens, yards, or narrow lawns, than for landscape gardening on a large scale, as its beauty is of a formal kind; and though the tree often grows to thirty or

forty feet, its appearance is never more pleasing than when it is from ten to fifteen or twenty feet high. The dark green hue of its foliage, which is pretty constant at all seasons, and the comparative ease with which it is transplanted, will always commend it to the ornamental improver. But as a full grown tree, it is not to be compared for a moment, to any one of the tree species of evergreens that we have already noticed; since it becomes stiff and formal as it grows old, instead of graceful or picturesque, like the Hemlock, White Pine, or Norway Spruce. Its chief value is for shrubberies, small gardens, or courtyards, in a formal or regular style. The facility of obtaining it, added to the excellent colour of its foliage, and the great hardiness of the plant, induce us to give it a place among the four evergreens worthy of the universal attention of our ornamental planters.

The *Arbor Vita*, so useful for hedges and screens, is, we find, so rapidly becoming popular among our planters that it needs little further commendation.

Among the foreign evergreens worthy of attention, are the Chili Pine, (*Araucaria*), the Cedar of Lebanon and the Deodar Cedar,—three very noble trees, already described in previous pages, and worthy of attention in the highest degree. The two first have stood the past winter well, in our own grounds, and are likely to prove quite hardy here.

For a rapid growing, bold, and picturesque evergreen, the Austrian Pine, (*Pinus Austriaca*), is well deserving of attention. We find it remarkably hardy, adapting itself to all soils, (though said to grow naturally in Austria on the lightest sands.) A specimen here, grew nearly three feet last season; and its bold, stiff foliage is sufficiently marked to arrest the attention among all other evergreens.

* This plant may be had from six inches to two feet high at the English nurseries, at such extremely low prices per 1000 that our nurserymen can well afford to import and grow it a year or two in their grounds, and sell it wholesale for hedges, at rates that will place it in the reach of all planters. Autumn is the safest season to import it from England; as, if packed dry and shipped at that season, not ten plants in a thousand will die on the passage. We hope in a couple of years it will be obtainable, in large quantities, in every large nursery in America. We observe that ELWANGER & BARRY, at Rochester, advertise it at the present time as a hedge plant.

† "No tree," says the *Arboretum Britannicum*, "is better adapted than this for planting in narrow strips for *shelter or seclusion*: because, though the trees in the interior of the strip may become naked below, yet those from the outside will retain their branches from the ground upwards, and effectually prevent the eye from seeing through the screen. The tendency of the tree to preserve its lower branches renders it an excellent protection to game; and for this purpose, and also for the sake of its verdure during winter, when planted among deciduous trees and cut down to within five or six feet of the ground, it affords a very good and very beautiful undergrowth. The Norway Spruce bears the shears; and as it is of rapid growth, it makes excellent hedges for shelter in nursery gardens. Such hedges are not unfrequent in Switzerland, and also in Carpathia, and some parts of Baden and Bavaria. In 1844, there were spruce hedges in some gentlemen's grounds in the neighborhood of Moscow, between 30 feet and 40 feet high. At the Whim (near Edinburgh,) a Norway Spruce hedge was planted in 1823 with plants 10 feet high, put in 3 feet apart. The whole were cut down to 5 feet, and afterwards trimmed in a regular conical shape. The hedge, thus formed, was first cut on Jan. 25, the year after planting; and as the plants were found to sustain no injury, about the end of that month has been chosen for cutting it every year since. Every portion of this hedge is beautiful and green; and the annual growths are very short, giving the surface of this hedge a fine healthy appearance." [This is an excellent illustration of the capacity of this tree for being sheared; but good hedges are more easily and better formed by using plants about 18 inches or 2 feet high. Ed.]

The Swiss Stone Pine, (*Pinus cembra*,) we find also perfectly hardy in this latitude. This tree produces an eatable kernel, and though of comparatively slow growth, is certainly one of the most interesting of the pine family. The Italian Stone Pine, and the Pinaster, are also beautiful trees for the climate of Philadelphia. The grand and lofty pines of California, the largest and loftiest evergreen trees in the world, are not yet to be found, except as small specimens here and there in the gardens of curious collectors in the United States. But we hope, with our continually increasing intercourse with western America, fresh seeds will be procured by our nurserymen, and grown abundantly for sale. The great Californian Silver Fir, (*Picea grandis*,) grows 200 feet high, with cones 6 inches long, and fine silvery foliage; and the noble Silver Fir, (*P. nobilis*,) is scarcely less striking. "I spent three weeks," says DOUGLASS, the botanical traveller, "in a forest composed of this tree, and, day by day, could not cease to admire it." Both these fine fir trees grow in Northern California, where they cover vast tracts of land, and, along with other species of pine, form grand and majestic features in the landscape of that country. The English have been before us in introducing these natives of our western shores; for we find them, though at high prices, now offered for sale in most of the large nurseries in Great Britain.

The most beautiful evergreen tree in America, and, perhaps,—when foliage, flowers and perfume are considered,—in the world, is the *Magnolia grandiflora* of our southern states. There, where it grows in the deep alluvial soil of some river valley, to the height of 70 or 80 feet, clothed with its large, thick, deep green, glossy leaves, like those of a gigantic Laurel, covered in the season of its bloom with large, pure white blossoms, that perfume the whole woods about it with their delicious odor; certainly, it presents a spectacle of unrivalled sylvan beauty. Much to be deplored is it, that north of New-York it will not bear the rigor of the winters, and that we are denied the pleasure of seeing it grow freely in the open air. At Philadelphia, it is quite hardy; and in the Bartram Garden, at LANDRETH'S, and in various private grounds near that city, there are fine specimens 20 or 30 feet high, growing without protection and blooming every year.

Wherever the climate will permit the culture of this superb evergreen, the ornamental planter would be unpardonable, in our eyes, not to possess it in considerable abundance. There is a variety of it, originated from seed by the English, called the Exmouth Magnolia, (*M. g. exominsis*,) which is rather hardier, and a much more abundant bloomer than the original species.

REMARKS ON STRAWBERRIES.

BY DR. WM. W. VALK, FLUSHING, L. I.

WE pray the reader to keep cool, for both of us would rather eat strawberries than write about them; yet, as the strawberry question is not entirely settled, to the satisfaction of horticulturists generally and ama-

teurs in particular, and we have no idea that the subject is as easily *finished* as some persons imagine, and, withal, even experienced cultivators are continually "falling into error," (out of which their friends are

most willing to keep them,) we naturally have a desire to "light our taper," which, though it be dim, may still cast one ray into the midst of darkness, as a beacon to the traveller through the mists and mazes of an ever changing labyrinth of words—*vox et præterea nihil*.

What is the strawberry question? It is, whether or not any varieties of the plant are *diœious*? In other words, are there *male* and *female* plants of the *same* variety? These are the questions.

For the past two or three years, the matter has been freely discussed in books and periodicals, both horticultural and agricultural. It should be, therefore, settled, if possible, because it has an important bearing on the culture and improvement of an estimable fruit, and has led to the commission of great *mistakes*, by more than one nurseryman who had thousands of plants to dispose of.

A distinguished practical horticulturist, of Cincinnati, who has made the cultivation of the strawberry quite a hobby, and written a good deal upon the subject in dispute, strenuously maintains, that in many varieties there are perfectly distinct male and female plants. He speaks from ample experience, and supports his assertions by an appeal to facts,—all coming under his own personal observation. This is testimony of a very decided character.

Another gentleman, equally distinguished in horticulture, but not so practical as a strawberry grower, states—that the plants in their natural habits are *hermaphrodite*; i. e., they bear perfect flowers, with both male and female organs in the *same* flower, (as is *always* the case with the Alpine and European wood varieties,) and therefore every flower gives a perfect fruit; but, that the large growing strawberries, including our wild scarlets, the pines, and many other

varieties raised from them, have a strong tendency, *when cultivated in a rich soil*, to vary from the natural state, being deficient either in stamens, (male organs,) or pistils, (female organs;) and hence, according to the deficiency, are called male and female plants; and further adds, that this imperfect state originates from *over luxuriance*, brought about by cultivation. Here are statements quite as positive as those preceding them.

The late venerable and eminently practical proprietor of the "Linnæan Botanic Garden," published in 1828, a "Short Treatise on Horticulture." It is the *father* who speaks—not the son. At page 72, he thus writes:—"As beds of strawberries want renewing every two or three years, it will be necessary, in forming the new beds, to select plants in the proportion of *nine bearing plants*, (pistillate ones,) *to one barren*, (staminate;) and in order to do this with certainty, it will be best to mark them when in fruit." This extract expressly recognizes the distinction contended for by many, of male and female plants. He also adds, that the English red Hautbois, and the Pine apple, are very apt to be overrun with male plants; beds of them, without proper attention, will become almost totally unproductive. These are the words of experience. In September, 1845, a correspondent of the *Agriculturist*, referring to a communication on this subject in a previous number, boldly confirms the Cincinnati theory, "*which fully accords with the views of the late Wm. Prince, as well as with his (the writer's) own experience.*" From the deep reflection and sound judgment of the late Wm. Prince, we think *his* opinion entitled to great weight; and the *present* opinion of the *Agriculturist's* correspondent may be worth consideration, though his experience must have been *very short*, and his opinion, though so

strongly expressed, *very recently* adopted ; for upon referring to page 6 of a Catalogue for 1844, '45, we read as follows :—" *The silly twattle about male and female (strawberry) plants is calculated to grossly deceive the public, who cannot do worse than adopt any course in accordance with the suggestions arising from such ignorance.*" These two opinions, published by the same individual in the same year, are as contradictory as they well can be ; nor can the least weight be attached to such puerile vacillations, though in 1847 the writer goes back to the *correct* opinion of his father, that it is indispen- sably necessary to accompany the pistil- late varieties with about one-tenth of some staminate, to render them invariably pro- ductive. "This course was recommended in *our* (no, not *our*, the late Wm. Prince's) Treatise on Horticulture, published in 1828." It must cause the reader to smile, when put- ting *such* opinions in contrast. They form the climax of an extremely treacherous me- mory. *Quene Deus vult perdere, &c.*

Conflicting opinions have been expressed in the Boston "Magazine of Horticulture" by correspondents ; and the editor thereof has undoubtedly changed his mind, with respect to the character of *his* (Hovey's) Seedling. In 1838, a communication ap- peared in the May number of the Magazine of Horticulture, wherein it is stated that there are separate fertile and barren plants ; that in some plants the pistils are so few as to be scarcely visible, and in others no sta- mens are to be seen ; and, that when the plants bear staminate flowers only, they are of course *barren* ; when pistillate only, they are prolific. The recommendation was ad- ded, that for an abundant yield of fruit, one plant in eight or ten should be staminate, for the purpose of impregnating the pistil- late or fertile ones ; for if the latter only were grown, they would not bear at all.

From such practical directions the inference is obvious, that the writer recognized the existence of separate male and female blos- soms ; and also, that the one staminate plant should be of the same variety as the eight or ten pistillates ; thereby conceding that there may be both staminate, (*male*), and pistillate, (*female*), plants of the same variety. That *some* varieties of the straw- berry are of this character, there can be no doubt, although a writer in the Horticultu- rist for October, 1847, (Senex,) asserts that there is not a diœcious plant in the whole order. He terms the doctrine "sheer non- sense," and says that the word diœcious should be used, in its *strict* sense ; it would then mean, that Hovey's Seedling bore fe- male (pistillate) flowers on one plant, and male (staminate) on another plant,—“an evident absurdity.” Absurd and nonsensi- cal as he asserts it to be, however, Mr. TRACY of Windsor, Vt., states (Horticultu- rist for August, 1847,) that he has grown Hovey's Seedling “decidedly staminate, and as decidedly pistillate.” He was sur- prised, but there was “no mistake about the facts.” To the same effect is the testi- mony of Mr. ALLEN of Winchester, Va., in Hovey's Magazine for August, 1843.

In Nov., 1843, Mr. HOVEY thus expressed himself :—"We believe it is now the gene- rally received opinion of all intelligent cul- tivators, that there is no necessity of mak- ing any distinction in regard to the sexual character of the plants when forming new beds. The idea of male and female flow- ers, first originated, we believe, by Mr. Longworth, of Ohio, is now considered as exploded ; at least, so far as we have been able to learn, since the subject was agita- ted in our pages of last season, (1842,) *as well as from our own experience.*" Cultiva- tion alone, says he, creates *sterile* or *fertile* plants ; nor is there the least necessity of

cultivating any one strawberry near another to ensure fertility. Such was Mr. HOVEY's opinion in 1843.

In February, 1844, Mr. HUNTSMAN's views were published in Hovey's Magazine. This gentleman had observed the plant closely, and regarded it as anomalous in its diœcious character. Some varieties were perfect in both *male* and *female* organs; some perfect in male organs only, and some possessed, complete, only the rudiments of the fruit. The first are good bearers, though the fruit is small; the second are not worthy general cultivation; and the third are best of all, on account of great productiveness. Mr. HUNTSMAN's conclusions are, that one or more varieties of *pistillate* plants *will not* fruit unless impregnated by *staminate* plants, while others under favorable circumstances will. What the favorable circumstances are, he does not inform us.

Without any very material difference, MESSRS. BAYNE and COIT hold the same opinions, as also Mr. JAMES. See Hovey's Magazine, November, 1843, and March, 1844. To the same effect is the testimony of Mr. GARBER, in August, 1844, and Mr. JACKSON, in November. All of them assent to the *male* and *female* theory; they have practically demonstrated it; and the latter gentleman does not consider Hovey's Seedling *worth growing* without a few *male* plants to fertilize it.

In 1846, Mr. HOVEY's views were somewhat modified from his expressed sentiments in 1843. He had cultivated the strawberry for twenty years, yet had not, until now, discovered that some sorts had a tendency to barrenness *when growing away from other kinds*, and that *these* should be fertilized by *staminate* (male) plants. This course would give a *certain crop*, regardless of "soil, climate, cultivation, injudicious

selection of plants, or a normal defect in the organization of the flowers resulting in a deficiency of pollen." Three years before this, there was not the least necessity to grow any one strawberry near another to ensure fertility; now—there was a necessity for so doing. Experience had taught Mr. HOVEY in 1843, that there was *no necessity* for making any distinction of sexual character when forming new buds. Experience taught him, in 1846, that the one essential thing to produce fruit on his own seedling, was *the planting of perfect flowering kinds in near proximity*.

So much for opinions, and nothing would be easier than to multiply them; but to what good end shall they be recorded? conflicting, as they do, with *facts* known long since to professed botanists. Not a diœcious plant in the whole order—Rosaceæ? This is the opinion of *Senex*, in the Horticulturist, and he has termed it sheer non sense to say the contrary. But DON, Dr. LINDLEY, and a host of others, record the fact, that "the old Hautbois strawberry bears the *male and female flowers on different roots*." Does not this make it diœcious in a *strict* sense? If not, will some one, well learned in botanical science, tell us what the word diœcious means? It may be altogether "silly twattle" to call things by their right names, and the very perfection of learning to be "all things by turns, and nothing long;" but that there are male and female strawberry plants, is as certain as that two and two make four. In 1843, a correspondent wrote to Dr. LINDLEY a letter of inquiry on this very subject. The Dr. thus replied:—"Those flowers which have the stamens large, and the pistils small, *are males*; when the pistil is large and prominent, and the stamens dwarfish, *they are females*; when the two are equally balanced, *they are hermaphrodite*." Such

is the Doctor's precise language, and it is by no means obscure.

Let the reader pause and reflect on the statements made by all who have intended to set this matter in its true light, and he will perceive how wide of the mark most of them have come. Instead of clearing up difficulties, and looking only to the facts of the case, each has mounted his hobby, and not a few have been sadly thrown. What is experience worth when it contradicts itself? If words mean anything, and are used in their proper sense, there need be no misunderstanding as to their significance.

The strawberry belongs to the order *Icosandria Monogynia*, of Linnæus, the *Rosaceæ* of Jussieu. The stamens numerous. In this genus, what is called the fruit, is a fleshy receptacle or polyphore, with carpels (or seeds) appended to it. *Flowers hermaphrodite*. They are *naturally* so. Of this character, is—1, *Fragaria vesca*, with its varieties, *sylvestris* and *semperflorens*, *minor*, *hortensis*, *eflagellis*, *multipler*, *botryformis*, and *muricata*. These varieties embrace the Red, White, American, and Danish *Alpine Strawberry*, the Red and White *Wood*, Red and White *Bush Alpine*, *Frazier de Montreuil*, &c.; 2, *F. calycina*; 3, *F. collina*, and varieties; and 4, *F. platanioides*, with red petals. Here we have the type *specific*, and *no cultivation or richness of soil will change it*. In some of these varieties, too, there are peculiarities worth noticing. In var. *botryformis*, the stamens are transformed into flowers; and in var. *muricata*, the petals are wanting. A few sub-varieties of *hortensis* have black fruit.

But there are other species, and a great many varieties, which, varying in the development of their sexual organization, *must be termed diœcious*. We say varying in their sexual development, because the flow-

ers are *usually* diœcious; one or two species only have the flowers hermaphrodite. A definition of them, as a class, would read thus:—Carpels few, immersed in little pits in the receptacle. Stamens few. Flowers *usually* diœcious from abortion. The species are—1, *F. majaufea*, (hermaphrodite flowers;) 2, *F. breslingea*; and 3, *F. elatior*. There are two or three varieties of the first, six or seven of the second, and ten or twelve of the third. The *Hautbois* species and varieties are here included, (varieties of *F. elatior*), and although they are the most variable of all strawberries, they still retain a general character from which they do not naturally depart. In all the sorts of *Hautbois* there exist prolific and sterile plants; these last have very long stamens; they are true *males*. In the variety *frasier framboise*, [European Wood Strawberries,] the flowers are *always* diœcious. In the *Hudson's Bay*, the flowers are larger than any of the others; the stamens long, and permanent round the base of the fruit, even to its full maturity. This variety must not be confounded with a variety of the scarlets of the same name.

We now come to the species *F. virginiana*, embracing, as varieties, all the scarlets, and the, so termed, black strawberries. The flowers are *always* diœcious from abortion; styles very long, receptacle very tumid. The varieties of the scarlets are very numerous, though but a few can be estimated as first rate sorts. The *Downton* and *Elton* are among the black varieties.

The species *F. grandiflora*, embraces all the, so called, *pine strawberries*, the *frasier ananas* of the French. The flowers *always* diœcious from abortion. Among the varieties we find the *Keen's Seedling* and the old *Carolina pine*, with about twenty others. *Turner's pine* is a variety.

F. chilensis forms another species. It is a native of South America, in Chili and Peru, and west coast of North America. Flowers *always* diœcious from imperfect development. There are eight or ten varieties, but none of them are worth cultivation; all are tender, bad bearers, and of indifferent quality.

We have still, as species, the *F. bona-riensis*, *F. canadensis*, *F. sundaica*, and *F. monophylla*. The first may with propriety be referred to *F. grandiflora*; it is a native of Monte-Video and Buenos Ayres. Of the varieties of the other three but little is known; the *F. monophylla* has *hermaphrodite* flowers; it is the Frasier de Versailles of the French, and a worthless sort. If a classification were attempted, based upon the development of the floral organs, it might be thus stated:

The Alpines and Wood Strawberry,—*always hermaphrodite*.

The Scarlets and Black Strawberries, *F. grandiflora* and varieties, *F. chilensis* and varieties,—*always diœcious from abortion*.

The Hautbois and varieties, and what is

called the Green Strawberry,—*usually diœcious from abortion*.

If this arrangement does not meet the views of all, let a better be substituted; for something of the kind has become the more necessary, as a consequence of the confusion now existing in relation to the strawberry question, but about which, to our mind, there is no question at all. There are male and female strawberry plants, and of the same variety, too, though friend HOVEY emphatically says—*no!* and we can tell him, also, that there are kinds which *will* displace his seedling, though he may never yet have seen them.

Our views have now been given on the strawberry question; and, to our mind, it presents no difficulty, if disputants will but bear in mind that the diœcious character of *some* species, and of *all* varieties, is the result of accident rather than of fixed laws. The flowers proving abortive, failing to reach maturity in the developments necessary to perfect them, creates the necessity for sexual distinction, and, whether or not we know the reason, does not change the fact.

WM. W. VALK, M. D.

THE BEST MODE OF PRUNING THE PEACH.

BY A JERSEYMAN.

MR. DOWNING—It seems to me that the promulgation of the improved mode of pruning, called the “*shortening-in*” mode, in the “Fruits and Fruit Trees of America,” is one of the greatest benefits yet conferred on the thousands of cultivators of this best of all our fruits—the PEACH.

I believe you state that this mode has long been known and practiced in Europe, and that the peach tree is hence a great deal longer lived there than in the United

States. Be this as it may, I am sure that it was previously little known or practiced on standard trees in this country; that the great benefits that would result from it were beforehand quite unknown to the majority of our peach growers.

It is, indeed, the only scientific mode of pruning this tree; for the common way of thinning out the branches, practiced with little care or skill on most of our fruit trees, is particularly unsuited to this. No better

proof of this fact can be desired than one which I have every day before my own eyes. In my neighbor's grounds is a quantity of peach trees, six years old, which have never been pruned at all, except to thin out a few branches, which have borne two heavy crops, and already have that exhausted and lean appearance, indicative of feebleness and old age. The fruit which they bore last year was small, and comparatively flavorless. In my own garden I have a small plantation of peach trees, set at the same time as my neighbor's, but presenting a very different appearance indeed. They have been pruned for the past three years on the *shortening-in* mode. They have borne every year good crops of the largest and most delicious fruit to be found within my knowledge,—the crop regularly distributed over the branches. The trees are in most capital health; foliage deep green, and their shape, from the system of pruning adopted, round, bushy and symmetrical. Altogether, I am very proud of the effect of this mode of pruning upon my trees; and I assure you that many persons, who have come here to examine them, have gone away firmly resolved to "do likewise."

There cannot be a doubt that the peach tree exhausts itself, and is short lived in many soils, especially in those that are not deep and rich, by excessive over bearing. It is one of the great merits of the *shortening-in* mode, that by taking off a portion of the *ends* of every bearing shoot—that is to say, the young growth of the previous year—it effectually prevents this evil; since if you shorten-back the branch one-half, you necessarily take off one-half of the blossom buds, and diminish the probable crop of fruit one-half. This is treating the peach tree very nearly as it needs to be treated; for if one-half of the blossoms are thus taken off, it leaves the tree provided with just so

many as it can carry regularly, every year, without exhausting itself; and the fruit that is left is much larger, and a great deal more delicious than if the tree goes unpruned, and bears a full crop. This I have twice satisfied myself of by direct experiment, on trees side by side, of the same variety; and you could scarcely credit the improved quality of the pruned tree, without comparing them.

One of my acquaintances, who is an intelligent orchardist, and grows peaches for market on a large scale, now makes his trees branch out, or form their heads quite low, and shortens-them-in with a pair of large *hedge-shears*, (the blade two feet long,) fastened on long handles. In this way it is but a short job to prune a whole orchard.

I have used wood ashes as a manure for peach trees with the greatest benefit. It gives them a particularly healthy and sound look; that is, without becoming gross, or over-luxuriant, they make a moderate growth of good plump shoots, have very healthy foliage, bear high coloured and well ripened crops.

I use wood ashes, either leached or unleached. The former is, if quite fresh, about three times as strong as the latter; and, therefore, while half a peck of unleached is sufficient, usually, for a young tree just beginning to bear, I have found half a bushel not too much of the leached ashes. It ought to be spread over the surface, and dug in a few inches only. Probably the best time of applying it is in October; but I have also found it to answer admirably as late as June,—very soon, if the season is a rainy one, changing the common colour of the leaves to a deep emerald hue.

I have so high an opinion of the good effect of ashes, that, (agreeing with you, that the yellows is only disease, caused by

bad treatment and exhaustion,) I feel almost certain that the shortening-in mode of pruning, and the use of ashes, will drive this malady out of the country, if cultivators can be brought to estimate properly their joint value.

It is, no doubt, *best* to prune the peach

tree early; but, as I have seen no bad effects whatever from shortening-in as late as the middle of May, I advise such of your readers as may not have performed that operation already, on their peach trees, to take knife in hand and sally forth immediately. Yours. A JERSEYMAN.

TO RAISE GOOD VEGETABLES IN OLD GARDEN SOIL.

BY A CONSTANT READER, NEW-YORK.

DEAR SIR: I presume there are many persons, like myself, who have in their possession old kitchen gardens, in which, although the soil is rich, and appears in excellent condition, yet it is extremely difficult to get good crops of certain vegetables. I suppose this is owing to the long time that the soil has been under cultivation; for I have noticed, in my travels in the western states, that in many of those parts every species of our garden vegetables grows astonishingly well there, and to such a size, and in such abundance, as almost surpasses belief. The cultivation required there is scarcely worth the name. They just turn over the soil, deposit the seeds, and dress the plants out once, and a most abundant supply is the result.

This is, no doubt, owing to the perfectly new soil, unexhausted of its fertility, and naturally abounding with vegetable substances, ready to be converted into food for plants.

Now in our old gardens, on the sea-board, certain kinds of vegetables, as beets and potatoes, are easily grown year after year in the same soil, and give us regular and good crops. But there are also some sorts, like the bush bean, the cauliflower, etc., which are brought to perfection with a great

deal of trouble, and are almost always unsatisfactory crops.

I take it, that this is owing to the long continued culture of the soil; and that there is something in new soil quite different from manure that these plants require, and will not grow without.

Probably a little experiment, which I have made in my garden for two or three years past, will serve to exemplify this. Taking this view of the matter,—that certain vegetables wanted a fresher soil than that of an old kitchen garden, I thought I would, perhaps, be able to supply it by bringing up some of the *subsoil*, which had never seen the light, and mixing it with the old soil of my garden. As I did not care to go to the expense of trenching my whole kitchen garden upon an uncertainty, I made my first experiment by trenching a plat of it, upon which I intended to plant bush beans. This I did directly before planting. I had the ground dug to the depth of two spades and a half, (say about two feet,) and the old soil of the top well intermingled with the subsoil throughout. I had a fair coat of stable manure spread over the soil before the trenching commenced, which, of course, was incorporated with the whole. I judged this necessary, as the subsoil is a

gravelly loam, of a poor and hungry quality. When the plat was finished, the soil had an appearance of poverty by no means prepossessing. But I planted my beans, and had the satisfaction of seeing them grow vigorously and *produce most abundant crops*. The difference, indeed, between the product on this piece of trenched ground and another patch of beans in the old soil of my garden, the same season, was in favor of the trenched soil *fifty to one*.

This was three years ago; and I have had excellent crops on this quarter ever since. Two years ago, encouraged by the success of the foregoing experiment, I prepared my cauliflower quarter in the same way, with equally good results. Almost

every plant, put out in this renovated soil, headed well; whereas, before that, not more than half or a third would usually form flower heads at all.

As many persons cannot well afford to trench their whole kitchen garden at once, and may not be aware of the good effects of trenching a small part of it at a time, pray oblige them and me by publishing this, to show them its good results.

Yours. A CONSTANT READER.

P. S. I think, from comparison with experiments of the same kind, made by a neighbor, that the good effect is somewhat increased by trenching in the *fall*, rather than the spring, though I have found the latter time a good one.

ANNUAL ROOT-CUTTING OF CERTAIN FRUIT-BEARING PLANTS.

BY R. ERRINGTON.*

It certainly appears at first sight a bold recommendation, to advise cutting away those valuable organs destined by Nature to acquire sustenance for the vegetable structure. When, however, the reasons are carefully examined, it will, I think, be perceived, that such a practice under certain circumstances must be productive of decided benefit; more especially with regard to flavor in the fruit. Some distinction should be here drawn, in order to throw light on the matter, between those fruit-bearing shrubs or trees which produce their fruit chiefly on the young shoots of the preceding year, and those which produce principally from what the gardener terms "spurs." In casting a glance over fruit-bearing trees or plants in general, it will be obvious that with few and trifling exceptions, Nature has in this respect marked out two classes in broad and well defined characters.

In order to convey a ready idea of these two classes to those who are not practically

engaged in gardening, I would adduce the following, viz:—

Fruits bearing chiefly on the spur:

The apricot;
The red and white currant;
The plum; and

Fruits bearing chiefly on the young wood:

The gooseberry;
The vine;
The black currant;
The raspberry.

These will suffice to throw light on the matter in hand.

The first thing I would observe is, that from the circumstance of the spurs being for the most part situated on or near to the main stems, any undue extension of the young shoots above and around must of necessity produce such an amount of shade in the neighborhood of the spurs as cannot do otherwise than end in barrenness. The chances of light, in fact, to the home spurs of a gross red currant bush are about as great as to those of a tuft of fern in a dense wood. Who can wonder, then, at such

* From the Journal of the London Horticultural Society.

bushes becoming gradually denuded of spurs, or at their bearing badly coloured and worse flavored fruit?

As to the other class, the blossoms being formed on the annual shoots, are in precisely the situation most congenial as to light, and will also bear high cultivation much better than the former.

With regard to annual root-cutting, I must here observe, that the necessity for it will not arise on poor and unmanured soils; it is chiefly in our kitchen gardens, where, from a long course of tillage, accompanied by very frequent manurings, the soil has become what is commonly termed *effete*; by which we understand, that the mechanical texture is altered, partly through the decomposition of vegetable fibre, and partly, I believe, through the loss of inorganic constituents.

To give an instance; let us examine the common red currant. This it is well known has a greater tendency to produce what is termed "watery wood" than the white. Now on rich soils it will sometimes produce shoots of two feet in length during the first three weeks in June: the rapidity, in fact, with which such growth is made, might not inaptly be termed propulsion.

Now what is the consequence? The fruit, with the various tufts of leaves by which it is accompanied, is thrown into the most intense shade; and in proportion to the extreme grossness of the bush will the berries be found of a diminutive size and destitute of flavor. Nor does the evil end here, for the blossom spurs, intended to produce succeeding crops, and which need the fertilising agencies of light more than the fruit, are hereby rendered barren, or totally destroyed. And hence it is no uncommon thing in gardens to see huge currant bushes, showing signs of great age and vigor, destitute of fruit, with the exception of a mere tuft at the extremity.

Again, with regard to the strawberry; how frequently do we meet with exceedingly gross beds or plantations bearing little fruit, yet possessing enormous leaves! If much manure is dug into the soil at planting time, and the plants are placed too thick, this is sure to happen. It may not the first season, but will assuredly take place as soon as the plants crowd each other.

We find the cultivation of this valuable fruit very much improved within the last twenty years; and why? because prior to that, the importance of light was so much underrated. Few persons think of planting them thickly in beds at this period: and we shall find that the farther they are planted apart the finer will the produce be. The finest Keen's Seedlings I ever saw were four feet apart between the rows, and three feet between each plant. Each plant formed a huge isolated mound; and the quantity and size of the fruit were indeed most extraordinary. I have also seen the prolific hautboy thus treated, with a similar amount of success. This I confess astonished me more at that period than the Keen's; for in my younger days we were taught in the neighborhood of London, that the hautboy would only succeed in beds. Nor is this grossness, with thick planting, inimical to their bearing properties alone; deterioration of flavor is a sure consequence. The ripening period of the strawberry—the month of July—is very often a cloudy and wet period; and I have frequently known in crowded and luxuriant plantations of strawberries from fifty to seventy per cent. of the fruit actually rot on the ground. In such periods what an advantage thin planting possesses! If bright skies intervene the latter readily become dry, whilst the former will scarcely receive benefit. If strawberries are planted on good loamy soils, well trenched, with little or no manure, they will be found very different in character to those on light and highly manured soils; the whole plant will be more compact, the leaves smaller in circumference, yet thicker, and the plant will moreover endure periods of drouth much better.

Having now pointed out the evil effects of grossness, as tending to barrenness and loss of flavor, I come to the point from which I set out, viz., to recommend what I have practiced for years under such circumstances, and I think I may say always succeeded with, or at least it has always produced the result I anticipated. Let it not, however, be supposed for a moment that I advocate so foolish and prodigal a system as first to over-excite fruit-bearing trees by manures, and then to cut away their roots: by no means; I merely suggest a mode of

treatment for pampered subjects which it is not deemed expedient to destroy off hand.

The root-cutting I recommend for the current is practiced at the extremities of the fibres, and is a matter of great simplicity. A line is stretched parallel with the row, at about thirty inches from the stems (if strong bushes,) and the line "chopped out." The line being removed, a trench is opened at one end, and a deep spit dug out, nearly to the bottom of the roots, and placed aside, similar to the manner of making a celery trench. All roots on the farther side of the line, from the tree, are cut entirely away, and the trench merely filled again with the ordinary soil of the garden, which lies close at hand, and for which the excavated soil is substituted. This operation should be performed as soon as the leaves are fallen, in order that the bush may commence a series of fresh roots, to meet the demands of the coming spring. Now although I advocate cutting the extremities, I never dig over the surface roots of my bushes; these remain untouched, and even receive a top-dressing, when necessary, of half decayed tree leaves, more in order to coax the roots to the surface than for the sake of manuring.

In cutting the strawberries, my practice is to trim away all superfluous runners in the end of August; by which means the principal leaves of the mother plant dislodge themselves and separate, and thereby expose a much greater amount of surface to the light to ripen the bud for the ensuing crop. About the middle of October, a slight dressing of half rotten manure, chiefly leaf soil, is scattered over the surface of the ground; and the centre, between each two rows, merely one spit in width, is deeply dug; cutting of course all roots that lie within such boundary. I have always found this course to produce precisely the effects that might reasonably be anticipated, viz., a temporary reduction of grossness in the foliage whilst the new leaves are forming in the ensuing spring; with an acquisition of fresh young fibres by the time the greatest demand is made on the energies of the plant, viz., the swelling period of the fruit. Indeed, such good results have I ever found to follow this practice, that I am of opinion that a plot of strawberries may be kept in a tolerable prosperity for many years by thus annually digging and manuring.

DESIGN FOR A SMALL FLOWER GARDEN.

THE old geometric flower gardens, laid out with long beds, bordered with box, and separated by stiff gravel walks, are fast giving place to those more tasteful combinations of *masses* of gay, perpetual flowering plants, arranged upon turf, in the arabesque or English style.

In the former, you have a miscellaneous collection of plants, of all sizes and habits of growth, only a small part of which are seen in bloom at one time; while at almost all seasons naked stalks of plants, and bare dry soil of borders, appear here and there, almost in spite of the best efforts of the gardener, to disfigure and mar the general elegance of the scene.

In the latter, you have always the rich setting of the soft green turf, (which, of course, mown once a fortnight, is short and velvet-like;) and contrasting and enhanced in effect by this, are seen the beds of dwarfish plants, grown in masses, so as to give breadth and brilliancy of effect; these being composed only of plants almost perpetually in bloom, unite to form a floral picture, when well managed, as beautiful as the art of gardening will permit.

The following little plan of a flower garden, of this kind, on a small scale, is adopted from one of the designs of our late friend, MR. LOUDON. It is supposed to be formed in a plot of smooth level lawn, and

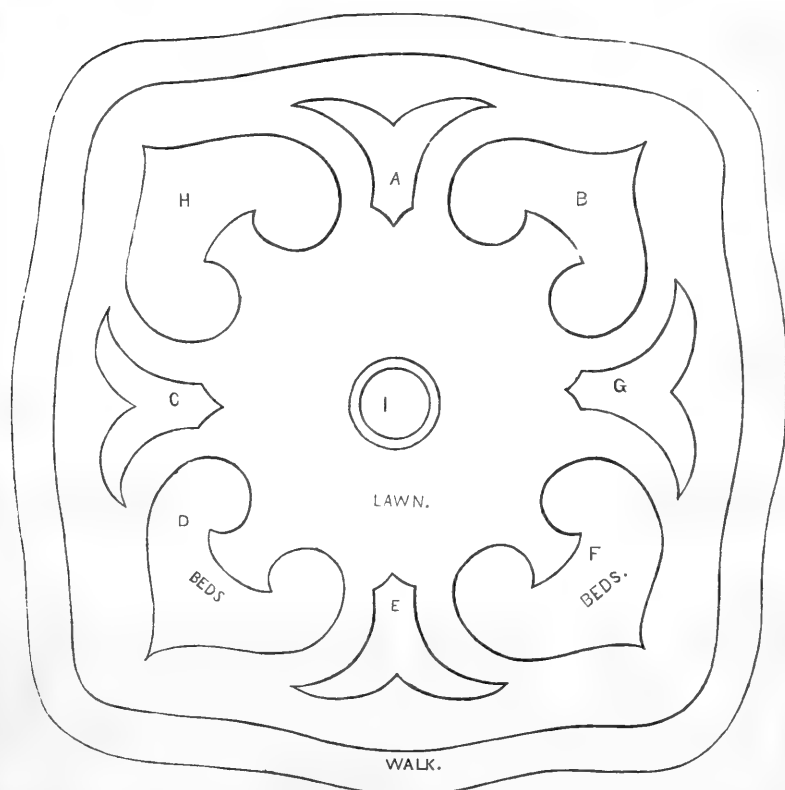


Fig. 58.—A Small Arabesque Flower Garden.

to be surrounded by a boundary walk, which may, or may not, be backed by a belt of evergreens and flowering shrubs. In the former case, it would make a complete little scene by itself in a portion of the garden or grounds.

In designs of this kind, of course, a good deal of the beauty depends on the arabesque beds being filled with plants of *dwarfish* habit, so as to enable the eye to seize the elegant effect of the *whole* group of beds at once. In order to attain this, any roses, or other plants, inclined to grow above eight or ten inches in height, should be *pegged down*; that is, the shoots bent down to the surface and confined there as fast as they grow. In this way the whole bed will be filled with foliage, and *no part of the sur-*

face of the soil will be visible; a *sine qua non* in this mode of management.

In making a selection of plants for this little garden, we have supposed the four largest beds to be filled with ever blooming roses. These are, in our opinion, the *gems* of all flower gardens in this climate; and as the finest sorts, originated within the last ten years, (which may now be had at most of the nurseries,) are unsurpassed in beauty of form, colour and fragrance, by any other flowers whatever, we think them far more indispensable in a small flower garden than the choicest perennials.

The centre of this garden, *i*, is supposed to be occupied by a vase, or a fountain. The arabesque beds are then appropriated as follows:

- A. The finest Scarlet Verbenas.
- B. Bourbon Roses.
- C. Hebe Petunias.
- D. Bengal Roses.
- E. The finest White Verbenas.
- F. Tea Roses.
- G. The finest large Purple Petunias.
- H. Noisette Roses.

- B. With Portulacacs, purple, scarlet and white.
- D. With Sweet Alyssum.
- F. With *Nemophila insignis* and *Mignonette*.
- H. With *Convolvulus minor*.

To give additional variety and effect we would sow, every spring, the seeds of the following *annuals*, of dwarf growth, between the roses in the four largest beds, so as to completely cover the surface of the same, viz :

This little design would, though composed of such limited materials, have at all times a gay and charming effect. It will not be too late to carry it into execution even when this number appears ; and if the beds are pretty thickly planted, (the roses turned out of pots,) its effect will begin to be enjoyed in a few weeks, and the whole will be in full beauty during the latter part of the summer, and the entire autumn.

HOW TO MAKE THE PLUM, APRICOT AND NECTARINE HOLD THEIR FRUIT.

BY A PENNSYLVANIA SUBSCRIBER.

[THE following mode of treating the plum, and other stone fruit trees, is not entirely new to us, as we have had similar successful accounts of trials on a smaller scale, from other portions of the country, and think very favorably of the plan adopted by our correspondent. Ed.]

I believe there are many parts of the country where the finer stone fruits, the plum, the apricot and the nectarine, are of little value, because they seldom mature a good crop of fruit. At least, this is the case in the mellow sandy soil which I cultivate, and in many parts of New-Jersey and Pennsylvania.

The trees grow as finely as any one could wish, blossom abundantly, and set good crops of fruit ; but such is the power of the wily little enemy, the curculio, which stings the young fruit just after the blossom falls, that often not one in a thousand escapes, and the poor fruit cultivator has the mortification of seeing a handsome crop all tumble to the ground before they, the plums, are two-thirds grown.

Looking upon this as a very great and serious evil, I want to lay before you my practice, which I have fully satisfied myself of the value of, in raising good crops every year of these stone fruits, where, in the common garden or orchard, they are a complete failure.

About ten years ago my attention was drawn to a plum tree in my neighborhood, which was rather celebrated as the only one that bore large crops of beautiful plums for several miles round. It stood behind the garden of a farmer, and just between two large hog pens. I might say, indeed, in the midst of a pen ; as there was hardly a space of two feet between the pens in which the tree grew. Well, this tree, as I have said, was loaded with the finest imaginable fruit, and the curculio did not appear to attack it in the least, while no other plum trees, on the premises, bore any crops of fruit except the common preserving *damson*.

Drawing the inference, that the swine destroyed or drove away the curculio, I immediately set about putting the informa-

tion so derived into practice. I had already a few plum trees standing near my farm buildings, and I immediately planted others there, so as to make a small orchard of that spot, entirely devoted to plum trees; adding, by way of experiment, a few apricots and nectarines. I ought to say that I had hitherto failed, if possible, even more completely with these two latter beautiful fruits than with the plum.

In this small orchard of stone fruit trees, comprising, altogether, perhaps thirty trees, at fifteen feet apart, as soon as the trees came into a bearing state, I directly turned my hogs. I took the precaution, (by the by, a most necessary one, every year,) to have the trunks of the trees closely boarded round, about three feet high, to prevent the hogs from barking them, as they certainly would. The first year the trees set only a tolerable crop; some of the *curculio* marks being visible on the fruit. But the second year I had a fine crop, and every year since, without a single exception, I have been able to gather a good crop of very fine plums. The apricots and nectarines have borne equally well, though sometimes the fruit of the latter tree has shrivelled from some cause unknown to me.

To be more definite, I ought to add that I have found it best to allow the hogs to "have the run" of the orchard for stone fruit all the year, with the exception of about two or three months. I shut them out as soon as the fruit is fully grown, and begins to turn colour, and approach maturity. This enables me to put the orchard in something like a *visitable* condition for any of my family who themselves wish to gather fine and luscious plums, apricots and nectarines. I keep the hogs out until the latest ripening plums and nectarines are past, when they are again allowed free range of it. In order to accomplish this

exactly to my mind, I have my hog pen proper on one side of the orchard, with two doors; one door leading into the orchard, and the other into a small enclosure or yard, which they have the run of only when they are shut out of their regular quarters—the orchard.

As I understand it, the hogs in the outset devour all the plums, &c., that drop from the trees in June and July, (as all the insect punctured ones infallibly do.) In this way, they effectually prevent the increase of this insect; since, if the fruit is allowed to remain on the ground, the young maggots soon leave it and go into the ground, where they stay till the time comes round for them to rise out of it to sting the fruit again. By continually rooting in the soil, the hogs not only keep it mellow, and, in the main, free from weeds, but they destroy any grubs of insects that still remain in it; while the manure they furnish to the trees appears to be very much adapted to promote their growth, and keep them in good health.

I cannot, of course, undertake to say that in a crowded neighborhood, much infested with the *curculio*, this mode would completely answer the purpose of securing a good crop, because it is well known that this insect is somewhat migratory, though I think it never flies far. But I can say that at my place, some miles distant in the country, where, however, all the farmers round cultivate the plum unsuccessfully, I have had very full success by following the mode pointed out.

I have observed, in a previous number of your journal, that both a correspondent and yourself recommend depositing a pile of fresh stable manure round the trunks of plum trees, just before they come into blossom, or soon after, in order to prevent the insects from attacking the fruit by the

odor which rises from the manure. It has struck me since, that something of the same effect may follow from making a swine yard of a small stone fruit orchard. I find that a dozen hogs, kept in a space large enough for twenty or thirty trees, give it,

for the time it is occupied by them, quite an atmosphere of their own, which the delicate nerves of the curculio may not be able to bear. Respectfully thy friend.

A PENNSYLVANIA SUBSCRIBER.

Philadelphia, 4th mo., 1843.

THE LARGE FLOWERED TECOMA.

ONE of the most showy and magnificent of all our climbing shrubs, is the Large-flowered Tecoma, [*Tecoma grandiflora*,] a native of China and Japan, but now to be found in many gardens in this country.

This plant closely resembles, in its foliage and manner of growth, the well known Trumpet flower or Trumpet creeper, [*Tecoma radicans*,*] a native of the southern states, whose large clusters of reddish-orange coloured, trumpet shaped flowers are produced in profusion all the latter part of the summer.

But the *Tecoma grandiflora* is a much more showy and beautiful plant than the old species. In the growth of the wood, it is rather more slender, and the leaves more coarsely serrated than those of *B. radicans*. The vine has the same habit of attaching itself firmly to a wall, or building of stone, brick, or wood, or to the trunk of a tree within its reach, by the numerous small air-rootlets which it sends out from the inner side of its young shoots.

In the blossoms of the *Tecoma grandiflora*, however, lies its peculiar beauty. These are produced, in a great profusion of clusters, in July and August, so as to give the whole plant an exceedingly gay and lively appearance. They are not long and tubu-

lar, like those of the common trumpet flower, but somewhat cup-shaped, and about a third larger than is represented in the annexed cut. The colour is beautifully varied; the outside being a rich pure orange colour, and the inside a rich orange-scarlet, marked with brighter streaks. These gay clusters open their blossoms in succession, so as to keep up a brilliant appearance for a long time; and we are acquainted with no climbing shrub, except the Chinese Wistaria, which at all vies in elegance or brilliancy of effect, in the garden or pleasure ground, with this, during the season of its bloom. Last season we counted over three hundred in bloom, at once, upon a plant in our neighborhood; and the same profusive display continued for a fortnight or more.

The *Tecoma grandiflora* may be grown with perfect ease wherever the old Trumpet flower (*T. radicans*) thrives. North of this it will, perhaps, require a little protection in winter, such as a layer of straw tied over the larger shoots, or some branches of evergreens laid against them at the approach of winter. A northern site will also be found the better one at the north, wherever there is doubt of its hardiness; since the temperature will, in such a site, be more uniform and less injurious than in a southern aspect. Wherever the Isabella grape ripens, this handsome climbing shrub

* *Bignonia radicans*, of LINNÆUS and the older botanists. JUSSEAU has very properly separated the old genus, *Bignonia*, into two; giving the name *Tecoma* to the two species formerly known as *B. radicans* and *B. grandiflora*.



Fig. 59.—*The Large Flowered Tecoma.*

will be easily cultivated in almost any situation. If there are any fears of its hardiness it may be protected, as we have pointed out, for a couple of years, till the wood gets strong and well hardened.

Any dry, light, well drained soil suits this climber. It should be made moderately rich ; and in such soil, when planted

against a wall, it will cover a space 12 or 14 feet square in two or three seasons. It is well worthy the attention of those who are looking for climbers of a permanent kind, to cover unsightly walks or close fences, or to render garden buildings of any kind more ornamental, by a rich canopy of foliage and blossoms.

SELECTION OF THE BEST HARDY SHRUBS.

BY AN AMATEUR, NEW-YORK.

I SEND you, for beginners, a selection of choice shrubs, that will grow in almost any good garden soil in the northern states, and require little care. The nursery catalogues contain double the number of species that follow, but there is always a choice; and, as the young planter is often puzzled to choose from mere names, perhaps the following selection, with brief descriptions appended to each, may prove an assistance. It is the result of many years attention to ornamental gardening. I ought, also, to mention that when beautiful effect, alone, is the point aimed at, it is often better to hold on to fine old species of flowering shrubs than to take new ones, that are prized merely on account of their novelty.

What is chiefly wanted in the shrubbery, it appears to me, is either fine foliage, or good habit of growth, or beautiful bloom. Where all these can be found *combined* in one shrub, that shrub may be considered as perfect. But such shrubs are rare; and we must often be content with fine foliage with indifferent flowers, or fine flowers with indifferent foliage. For general effect, perhaps the latter class of shrubs are the most to be prized,—since the flowers last but a short time, while the beauty of the foliage is a source of every day pleasure.

For the sake of convenience, I shall arrange my shrubs in classes according to their height, as follows:—

I. Shrubs from 2 to 4 feet high.

MEZEREUM, (*Daphne mezereum.*) Almost the first flowering shrub that blossoms in the spring, (coming out even before the crocus;) its charming little pink blossoms thickly scattered along the branches, ren-

der it highly interesting in every garden. There is a white blossomed variety, and also another (*D. m. autumnale*,) which blooms in the autumn.

JAPAN QUINCE, (*Cydonia japonica.*) This is one of the finest of early shrubs. The original species, (commonly known as *Pyrus japonica*,) has a profusion of flowers, of such a brilliant red that it is called "Fairie's fire" in some parts of England. They appear early in April or early in May. The white Japan Quince has, properly, *blush*-coloured flowers, quite like those of the apple tree.

OAK-LEAVED HYDRANGEA, (*Hydrangea quercifolia.*) One of the handsomest of all small shrubs, both in foliage and flower. The blossoms are white, and remain in bloom for two months. The leaves are large, and, in figure, are like those of the oak. This plant is, I think, from Florida; yet it bears a northern winter of 10° below zero without injury. The common greenhouse hydrangea, (*H. hortensia*,) is one of the most magnificent of flowering shrubs, and may be cultivated in the open air about New-York with very slight protection. It is naturally a *swamp* plant; and if planted by the side of a pond, in the shelter of thick evergreens, will stand our winters without any protection, and bloom superbly. In common garden soil, its stems should be thinned out, bent down, and covered with sandy soil at the approach of winter. In this way I have known a single plant to attain a circumference of 20 feet, and produce more than a hundred bunches of blossoms in a season.

JERSEY TEA, (*Ceanothus americanus.*) This

little dwarf native shrub is so pretty and delicate in its white blossoms that it is well worthy of a place in the shrubbery border. Flowers in June.

PERSIAN LILACS, (*Syringa persica*.) Far more delicate and pretty than the common lilacs, both in leaf and blossom. The bunches of flowers are frequently a foot long, and weigh down the terminal slender shoots so as to give the plant a very graceful appearance. The *white* and the *purple*—both beautiful. The *cut-leaved lilac* has interesting and delicate foliage. May.

FRAGRANT CLETHRA, (*Clethra alnifolia*.) Numerous spikes of rich spicy-scented, white blossoms, produced in midsummer, give this shrub its principal charm—next to that of being easily cultivated.

MISSOURI CURRANT, (*Ribes aureum*.) One of the most popular of sweet scented shrubs. Its golden yellow flowers have a charming fragrance, and it grows freely in every soil.

CRIMSON CURRANT, (*Ribes sanguineum*.) With foliage somewhat like that of the black currant, and pretty racemes of large crimson blossoms; this is a very neat spring flowering shrub. Unfortunately, it is not entirely hardy in northern gardens, but requires protection in winter. There is a *double crimson* and a *white* variety—both beautiful. May.

GARLAND DEUTZIA, (*Deutzia scabra*.) Unquestionably one of the best of all the new shrubs. Its numerous white flowers are not unlike those of the orange, though the general habit of the plant is that of the syringa, to which it is related. Everybody should cultivate it; and it grows so freely from cuttings that they may easily do so. May and June.

SWAMP BUTTONWOOD, (*Cephalanthus occidentalis*.) Though, to our taste, one of the richest native shrubs, this is very seldom seen in our gardens. It is easily trans-

planted from its native sites, and grows well in the shrubbery. Its foliage is excellent; in form and colour, and its white flowers, agreeable. August.

DOUBLE DWARF ALMOND. So well known as to need no description, and universally admired. May.

ST. PETER'S WREATH, (*Spiraea hypericifolia*.) This most delicate and pretty wreath-like spirea is one of the hardiest of shrubs; and though its branches are slender, and its foliage too small to produce much effect in the shrubbery, yet its numerous white flowers render it attractive while in bloom. May.

SIBERIAN PEA TREE, (*Carragana cham-lagre*.) A shrub with large, yellow, pea-shaped flowers, quite ornamental at the latter end of May or the beginning of June.

UPRIGHT OR SHRUB HONEYSUCKLES, (*Lonicera tartarica*.) There are few shrubs indeed, where foliage, habit, and flower are counted, so entirely satisfactory as these. They grow into neat, close, well shaped bushes, with full foliage, and of a good colour, all through the season. In spring, their neat little blossoms are sprinkled profusely over the whole shrub, and from midsummer to autumn they are ornamented by numerous crimson berries. There are two colours with white and with pink blossoms, both equally pretty and desirable, even in the smallest collection of shrubs. May.

TREE PÆONY, (*Pæony moutan*.) Magnificent, truly, in their flowers, are the Chinese tree Pæonias, (often as large as a man's head;) easily cultivated, quite hardy, and among the noblest low shrubs of the whole catalogue. There are now a number of fine sorts,—double white, double rose, &c. &c.; the old double Banksii, perhaps, the finest of all still. Even the *single poppy-flowered* one, (*P. papaveracea*), is a most interesting and beautiful shrub. A good

warm, deep, sandy loam, suits them best; and while the plants are young, let the earth be hilled up about them at the approach of winter. May is the season of their bloom.

SWEET SCENTED SHRUB, (*Calycanthus floridus*.) Remarkable for its brown flowers, (a colour rather rare among flowers,) and for the delicious pine-apple perfume which they give out; a few plants scenting a whole garden. May and June.

II. Shrubs from 4 to 8 feet high.

DWARF HORSE-CHESTNUT, (*Pavia macrostachya*.) This is a great favorite of mine. Planted alone, it forms a neat, small, rounded bush, of excellent foliage all the summer; and, in July, its numerous long spikes of white blossoms are truly beautiful. It is not half so much planted as it deserves to be.

VIRGINIA FRINGE TREE, (*Chionanthus virginica*.) Among the most refined and attractive of flowering shrubs are the White Fringe trees of Virginia and Carolina, which are quite hardy farther north than New-York. The flowers, which appear early in June, in great profusion all over the branches, look like tissue paper fringe, most exquisitely cut, and contrast, in their snowy whiteness, admirably with the dark green foliage. There are two sorts; the *broad*, and the *narrow-leaved*. I think the latter grows best in our gardens; and its foliage is, also, of a richer and darker green. A little leaf mould or well rotted peat earth, mixed in the soil in which they are planted, improves their growth.

ROSE ACACIA, (*Robinia hispida*.) An old favorite in our gardens, with rich, fine, deep-pink, locust-like blossoms, appearing in May and June. It is a fine shrub, and deserves well of the ornamental planter.

SYRINGA, (*Philadelphus*.) All the Syringas are highly ornamental in their thick fo-

liage and abundant white blossoms. There is a variety of the common syringa, with *double*, (really, semi-double,) flowers, rather prettier than the type, and equally sweet. The Carolina syringa, (*P. grandiflorus*.) is the most showy species, with very large flowers, blooming two or three weeks later than the common syringa, and therefore very desirable, though the flowers are not fragrant. The *variegated-leaved* variety is one of the best of all those shrubs with parti-coloured foliage. May and June.

PRIVET, (*Ligustrum vulgare*.) Common as the privet is, still it is one of the most valuable things for general shrubbery planting. Its white flowers are pretty, and its foliage, which hangs on till December, is thick and of a good colour. It will grow in any situation,—open, or under trees, etc. It will, therefore, be found valuable for thickening-up shrubby plantations, concealing unsightly banks, and many other purposes. No plant is more easily grown from cuttings. July.

ALTHEAS, (*Hybiscus syriacus*.) In midsummer, when most shrubs are done blooming, the altheas are in full beauty; and they then give a gay appearance to pleasure grounds for a long time. The sort with double variegated flowers is, perhaps, the finest, though there are a great number of various shades worthy of cultivation. All seem quite hardy, and grow with great ease in all soils, except the *double white*, which is usually quite tender north of New-York. August and September.

INDIGO SHRUB, (*Amorpha fruticosa*.) The lively, rich, purple flowers of this plant, relieved by gold coloured stamens, render it quite ornamental in its blooming season. It is rather ugly in its habit of growth, and needs a little pruning and shortening-in at midsummer to correct this. June.

CHINESE PURPLE MAGNOLIA, (*Magnolia*

obovata.) A fine shrub, with large white and purple blossoms. When the plant is a few years old, it maintains a succession of bloom for several months. It needs a sheltered border north of New-York. May to July.

SWAMP MAGNOLIA, (*M. glauca*.) A native of New-Jersey, and one of the very finest of shrubs for the garden,—with neat laurel-like leaves, and exquisitely formed and scented white blossoms. Sandy loam, mixed with a little leaf soil from the woods, suits it best; and it accommodates itself to dry soil. July.

BURNING BUSH, or SPINDLE TREE, (*Euonymus*.) Excellent shrubs for massing and general planting in the shrubbery. Their flowers are inconspicuous; but their berries are highly ornamental in autumn. The finest species, both in foliage and fruit, is the broad leaved, (*E. latifolius*.) The *white* and *red-berried* have a pretty effect when planted near each other.

DOUBLE SLOE, (*Prunus spinosa pleno*.) This is exceedingly pretty, in its numerous small, double white flowers, which appear in May. It is a variety of the English wild plum or sloe.

EARLY WHITE VIBURNUM, (*Viburnum lantanoides*.) A native of the Catskill mountains, and a capital hardy shrub. The foliage is large, broad and showy, from the earliest to the latest season; and the clusters of white blossoms are neat in appearance. It makes a fine, large, rounded bush. May.

ENGLISH FLY HONEYSUCKLE, (*Lonicera xylosteum*.) This is one of the shrub-honeysuckles, and makes a good compact growth. Its pale green foliage contrasts well with those of other shrubs; and its straw-coloured blossoms are pleasing in effect. May and June.

WEeping CHERRY, (*Cerasus semperflo-*

rens.) A charming little tree, with leaves like those of a myrtle, and delicate branches, as pendant as those of a weeping willow. It bears flowers or fruit all the summer.

III. Shrubs from 8 to 12 feet high.

CHINESE WHITE MAGNOLIA, (*M. conspicua*.) No doubt this must be admitted to be the most superb of all the large shrubs of our gardens. It is perfectly hardy; and a full grown plant will produce thousands of its large, pure white, and fragrant flowers. As it blooms very early in the season, it should be planted near the house, with a few evergreens to back it. April.

SOULANGE'S MAGNOLIA, (*M. soulangiana*.) Flowers larger than the above, opening a week or ten days later, and equally beautiful, though of a pale purple without, and white within. It is also quite hardy; and both sorts should be found in every collection. They grow freely in any good soil, but should be transplanted quite small. May.

FLOWERING HAWTHORNS, (*Crategus oxyacantha*, var.) I am sorry to see these truly beautiful shrubs so seldom in our gardens and pleasure grounds. Their flowers are exquisitely beautiful; those of the double varieties like *miniature roses*, and their foliage is neat and agreeable to the eye. The *double white* is the greatest favorite; but the *double pink* and *single scarlet* are equally attractive. May.

DOUBLE FLOWERING CHERRY, (*Cerasus vulgaris, flore pleno*.) This is the most striking and beautiful of all flowering fruit trees, and deserves a place in every garden. In the shrubbery, it should be worked on the *Mahaleb* stock to dwarf its growth, or root-pruned every year to answer the same end.

The double flowering peach and the double flowering apple, are also highly ornamental for the shrubbery; their flowers as beau-

tiful as those of many roses. All these double-bloomed fruit trees flower in April and May.

COMMON DOGWOOD, (*Cornus florida*.) Though this is plentifully seen in our woods, it well deserves to be more frequently introduced into shrubberies. Its flowers and foliage are both excellent; and the effect of its rich, purplish, autumnal leaf-tint, among other shrubs, is very striking in autumn. May.

SNOWDROP OR SILVER BELL TREE, (*Halesia tetraptera*.) A large shrub, highly ornamental when clad, in spring, with its myriads of silvery bells. The finest species is *H. diptera*. It is rather scarce in the nurseries, but has much larger flowers, and of a purer white, than the other. May.

CORNELIAN CHERRY, (*Cornus mascula*.) The bright yellow flowers of this shrub make the garden gay, sometimes as early as March. Its numerous cherry-like fruit, of the colour of cornelian, are also ornamental; and its foliage is thick, and of a good dark green colour.

FLOWERING ASH, (*Ornus europeus*.) This small tree bears a great abundance of panicles of charming white flowers, in clusters, at the ends of the branches, like those of the lilac, and is highly ornamental. June.

SCARLET HORSE-CHESTNUT, (*Esculus rubricunda*.) Unquestionably the finest of all horse-chestnuts, and one of the most ornamental of all small trees. The flowers are of a rich crimson, and the plant, when

grafted, begins to bloom when only 3 or 4 feet high. There are very fine specimens of this tree in Philadelphia; and I cannot well understand why it has not been propagated and planted more generally. It is very rarely seen in our gardens.

VENETIAN FRINGE TREE, (*Rhus cotinus*.) This popular shrub has a dozen names, one of the most expressive of which, is that of the French—*arbre à perruque*, (wig-tree.) From July to October it is covered with the purplish or brown abortive seed plumes, which render it a highly interesting object in the shrubbery. It is very hardy and grows in all soils.

LABURNUMS, (*Cytissus laburnum*.) The Laburnum or *Golden chain*, is an old favorite; and its numerous pendant clusters of pea-shaped blossoms make it a very ornamental object in May. *C. alpinus*, the Scotch laburnum, is rather hardier and finer than the common sort. The *oak-leaved* and *purple laburnums* are also both pretty varieties.

JUDAS TREE, (*Cercis canadensis*.) This is the "red-bud" of the western states; and a very pretty spring flowering tree it is. Shortening-in the ends of its branches ever year, like those of the peach tree, improves its foliage and flowers. May.

JAPAN KOELREUTERIA, (*K. japonica*.) This is a striking shrub of thrifty growth and good foliage. Its blossoms are yellow, and are succeeded by inflated pods of singular structure. July. AN AMATEUR.

USES OF THE APPLE.—In the Transactions of the New-York State Agricultural Society, the Apple Committee speak as follows: "Aside from its edible uses to man, the apple is an important and economical food for most kinds of farm stock. Milch cows thrive upon it, when fed in moderate quantities, and it adds to the quantity and quality of their milk. It is also an excellent food in making beef. Horses eat it readily; for them it is a succulent and healthy food. Sheep, swine, and geese, will fatten altogether on good apples; and for all kinds of poultry they are nutritious food."

AN ESSAY ON THE CULTIVATION OF THE ONION.

BY JOHN W. PROCTOR, DANVERS, MASS.

[We are indebted for the following sensible and practical paper, to a pamphlet published by the Essex Agricultural Society, Mass. ED.]

The culture of onions has increased so much, within a few years, in this vicinity, that it has become one of the staple products of the county. In the town of Danvers, more money is realized from the sale of the onion, than in any other product of the soil. Products of so much value, and commanding so much attention, are fit subjects of inquiry; and if there be any facts relating to their cultivation not generally known, it may be useful to have them brought forward.

In making these inquiries, our attention has been directed almost entirely to practical cultivators, without reference to scientific treatises. Our intention being to tell their story, as near as possible, in their own way.

We shall treat of the subject in the following order:

1. The preparation of the land.
2. The manure best adapted to promote the growth.
3. The raising and planting of the seed.
4. The care necessary to be applied while growing.
5. The blights and injuries to which the crop may be liable.
6. The time and manner of harvesting.
1. As to the preparation of the land.

Differing from most other crops, the onion grows well on the same land for an indefinite number of years. Instances of continued appropriation of the same pieces of land to the growing of onions, for *ten, fifteen, twenty, and even thirty years*, have come to our knowledge. It is the opinion of many that the crop is better, after the land has been thus used a few years, than at first. Whether this arises from any influence of the crop upon the soil, or is the effect of continued dressing of manures, we have no

means of determining. This is certain, that the qualities of the soil necessary for the production of good crops are not exhausted by continued cultivation.

Rarely, if ever, have we known the onion sowed upon the turf when first turned over. It is usual to subdue and pulverize the soil, by the cultivation of corn, or some other crop. Not unfrequently the first year with corn, the second with carrots, and afterwards with onions. It is important, before the seed is sown, that the surface be mellow, finely pulverized, and clear of stones or other impediments, to the free and unobstructed use of the machine for this purpose. The finer and more uniformly mellow the surface is made, the better. Shallow plowing, say from four to six inches deep, is usually practiced. Once plowing only in the spring, and frequent harrowings, are practiced. Before the plowing, the dressing is usually spread upon the surface of the field, so as to be covered or intermixed in the furrow. The mingling and subdivision of it, is effected by the use of the harrow.

Whether it would not be advantageous occasionally, to stir the land to the full depth of the soil, is a point on which there is a difference of opinion; most of the cultivators inclining to the use of shallow plowing only. There are some facts tending to show, that occasional deep stirring of the soil does no harm to the onion crop, but on the contrary is decidedly beneficial. As for instance, onions do better where carrots have grown the year preceding, than after any other crop. The carrot necessarily starts the soil to the depth of ten or twelve inches. Possibly there may be some other influence upon the soil from the plant itself. Our belief is, that the thorough and deep stirring of it, is the principal preparatory benefit.

2. The manure best adapted to promote the growth.

Any strong manure, well rotted and finely

subdivided will answer. But the general impression seems to be, that manure from stables, where the horses are freely fed with grain, is the best; and that it should be at least one year old, because it will not be sufficiently rotten in a less time. All agree that the dressing for the land should be kept near the surface, well mixed, and as fine as possible. Though we have seen the present year a very superior growth of onions, where green manure from the barnyard was applied in the spring; but particular pains were taken to subdivide and intermingle it with the soil; and to bush-harrow the land so thoroughly, that very little manure was exposed upon the surface.

Muscle-bed is frequently used upon onion land. A portion of this is deemed by some almost indispensable. We have known the continued use for half a dozen years in succession, even without other manures, with a continuation of fair crops; but the general impression is, that it will not do to repeat the application of muscle-bed many years in succession. The effect being to harden the land, and make too much of a crust about the surface. Without question, the effect of the muscle-bed is congenial to the growth of the onion, giving those who live in the vicinity of rivers where it is found, a special advantage over those who are remote from it.

Leached ashes are also a valuable manure in the cultivation of the onion; more so when *leached* than before. All kinds of ashes are advantageously applied on onion land.

Compost manure made of meadow mud and droppings from the cattle, we have known advantageously applied on onion fields; but we have many doubts as to this being the best application of this kind of manure. A more lively and quickly operating manure is better for the onion; one that will give them an early start, and advance them as fast as possible, in the first part of the season. The utmost vigilance and activity is used by our cultivators in getting their land ready, at an early period of the season, for the reception of the seed. It is the first field labor of the spring. The use of compost manure will depend much upon the constituents of the soil with which

it is mixed. If the soil be a sandy loam, with a porous subsoil, the compost will do tolerably well; but if it be a black soil, with a clayey subsoil, such as are most of the lands where onions are raised in this vicinity, stable manure, or muscle-bed, or leached ashes, or a mixture of these, will be a better application. The quantity ordinarily applied annually is from four to five cords to the acre. Whatever is applied should be generously applied. It will be vain to expect full crops of onions, without full manuring. When the manure is collected, it is benefited much by a free application of *elbow grease* in its preparation. The cultivator of the onion must work early and late, and in good earnest. Nothing short of forcible and persevering labor will answer. No man who is afraid of *soiling his hands or the knees of his trowsers* will do to engage in this business. Close work at the proper time, is the only sure guaranty of a good crop.

3. The raising and planting of the seed.

In relation to the onion, as well as all other vegetables, much care is necessary in the selection of the plants for seed, and the cultivation of the seed. By the application of this care, the character of the article raised may be modified almost at pleasure. Until within a few years the *flat onion*, hollow about the stem, has been preferred. The thinner the handsomer. But it is now understood, that the *round, thick, plump onion*, is preferable in many respects. It is thought to yield better, and weigh heavier. It is found to have a decided preference in the market, commanding *ten per cent* more in price. By selecting those of most desirable form, which ripen the earliest, and carefully setting them for seed, where they will not be exposed to the impregnation of the baser sorts, the quality has been materially changed and improved. These peculiarities in the onion were first noticed in this vicinity by Mr. Daniel Buxton. He was careful to select in the field before the crop was gathered, such onions as he preferred, and to preserve them for seed.

By so doing, the seed which he raised soon acquired a character superior to any other. Many of those who had been accustomed to raise their own seed in the ordi-

nary way, laid it aside, and purchased seed raised by Mr. Buxton, and found their account in so doing. There are three varieties of the onion raised in this vicinity—the *Silver-skin*, the *Red*, and the *White* onion. The *Silver-skin* is the predominant species, and more cultivated than all others. The *Red* is preferred by some—sells better in some foreign markets, but does not yield so abundantly. The *White onion* yields as well as either of the others, is milder and preferable for immediate use; it will not keep as well, and is not fit for exportation; which is the principal use made of our onions.

The common drill machine is used for the distribution of the seed. This admits of regulation, so as to scatter it more or less thick; and in this there is room for the application of sound judgment. The usual quantity sown is about three pounds to an acre. As a general rule, we should say, one pound of good seed was the proper quantity for a quarter of an acre of land of good quality well prepared. It is desirable to have the seed planted as thick as they will grow fairly, both to secure a full crop, and prevent the onion growing too large. Onions from one to two inches in diameter being preferred to those of a larger size. The skilful cultivator carefully looks after all these incidents relating to his crop.

4. The care necessary to be applied while growing.

Much of the success of the crop depends on this care. At first the plant is extremely tender, and requires to be handled with much caution. Any derangement of the fibres or roots of the young plant, is attended with prejudicial consequences. Much attention is necessary to prevent weeds gaining the ascendancy; and in eradicating the weeds. Want of due care in this is often the cause of failure of a crop. We have known the present season, a highly promising crop to be injured *twenty per cent.* at least, by permitting the weeds to remain unnoticed *one week too long*. This is especially true when there has been a want of due care in preventing the scattering of the seeds of the weeds on the land in the years preceding. Care should be taken, both that no weeds shall ripen their

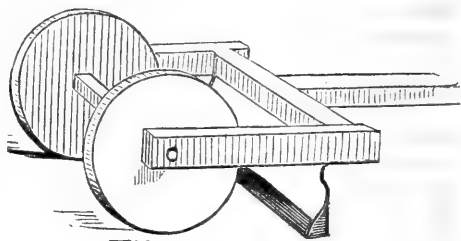


Fig. 60.—Onion Hoe.

seed upon the land, and that no weed seed shall be found in the manure. In this respect, warm stable manure, muscle bed, and ashes, have a decided superiority over all other manures. Perhaps there is no plant more liable to be injured by weeds than the onion. The fibres it sends out are very numerous, minute and tender: any fracture of any of these, necessarily impairs the perfection of the plant. When the land is in the proper condition, two careful weedings are all that may be necessary. The rest of the stirring of the ground that may be required to promote the growth, can be done with the *Onion Hoe*, (Fig. 60,) an instrument specially constructed for the purpose, moving on wheels, and adapted to the width of the rows. It is calculated to pass between the rows of onions—being either drawn or pushed. The wheels cover a space of about one foot in width, and the length of the cutting blade is also about a foot. The length of the handle is about five and a half feet. The usual distance between the rows is fourteen inches, and as the hoe takes a breadth of twelve inches, it cuts over all the ground, excepting a strip of two inches along each row. The cost of the hoe varies from \$1.25 to \$1.50. It was invented by Mr. Joseph Bushby, of Danvers, an intelligent and successful cultivator of garden vegetables, about 25 years since; and was used by himself and neighbors only for about ten years. It has now come into general use, and saves much of *back-aching labor*. The distance between the rows can be varied according to the quality and condition of the soil. Keeping the ground well stirred, loose, and free of weeds, greatly facilitates the bottoming of the onion. There is no plant that will better reward diligent care in the cultivation.

The entire difference between a bountiful crop and no crop at all, often depends on this. The old maxim "a stitch in time saves nine," applies with great force in raising onions.

5. The blights and injuries to which the crop may be subject.

So far as we have observed, this crop is as certain as any other that is cultivated. We know that onions will not grow without a reasonable proportion of heat and moisture; but we have rarely, if ever known, an entire failure of the crop, where due diligence has been used. There are occasionally blights, the causes of which we have not learned. The more prominent will be noticed.

Sometimes we have seen the plant covered with a small insect or *louse*, that gives the top a white or light colored aspect, and stops and stunts the growth. These make their appearance about the time the bottoming commences. We have heard their appearance charged to the use of muscle-bed; but whether they are limited to land on which muscle-bed has been used,

we cannot say. We think not. We think they are natural associates of the plant. The effect of them is to diminish the *quantity*, but not materially injure the *quality* of the vegetable.

The crop is sometimes injured by a *blue mould* that gathers on the tops, occasioned by fogs, or an excess of moisture from frequent and long continued rains.

There is a *worm* or *maggot*, occasionally found upon the onion plant, in the early stages of its growth, causing it to turn *yellow* and die. This insect will be found in the bulb, originating from eggs laid upon the leaves, by a small ash colored fly, the scientific name of which is said to be *Anthomyia ceparum*, (See Transactions of the N. Y. State Ag. Society for 1843, page 135.) It comes to maturity in less than a month, so that there may be several generations in the course of the season. Their appearance in this vicinity is rare. Pulverized charcoal and fire have been found the most effectual remedies, against the ravages of this class of depredators.

REVIEW.

THE CINCINNATI STRAWBERRY REPORT.—This is a pamphlet of 16 pages; being the report made by the committee of the Cincinnati Horticultural Society, mostly practical cultivators, (Dr. WARDER, *chairman*,) to whom the sexual character of the strawberry was referred for investigation last season.

THE *pith* of the report is contained in the following extract:

"After carefully collecting and reviewing the facts which they have observed and recorded, the committee present the following *conclusions*, or *postulates*, which have been deduced from their united observations:—

"1. That there are many different varieties of the strawberry which are characterized in part by the foliage, pubescence, mode of growth, and fruit; and also by their *inflorescence*.

"2. That the varieties of inflorescence, (the most important to the cultivator,) consist in the greater or less development of the stamens and pistils, respectively; upon which are based our terms and classification—'*staminate*' and '*pistillate*;' or, more familiarly with the mass of cultivators, *male* and *female*.

"3. That these classes are *permanent* aberrations from what the great Linnæus considered the normal condition of this genus of plants, as of its natural family ROSACEÆ.

"4. That nearly all botanists (and among them our most enlightened modern writers,) have overlooked the important error of Linnæus, and have simply copied after him in their descriptions of the strawberry, without verifying for themselves; while a plain,

unlettered market gardener, but a practical observing man, discovered* the important fact, that, while in some plants the flowers are apparently perfect in both sets of organs, one set is really defective, to a greater or less extent; and in others, the flowers which we style *pistillate*, have the stamens so imperfectly developed as entirely to elude a casual observation, and only to be discovered to a critical observer; and then, in most instances, found to be wholly abortive.

"5. That no *pistillate* plant will bear a perfect fruit if kept entirely apart from staminate varieties.

"6. That no *staminate* plants, which we have yet seen, can be depended upon by the cultivator as heavy bearers; though, from some unknown causes, the pistils may be so well developed as to be followed by a good crop, in some years, and in some situations.

"7. That there is no such thing known to us as a perfect flowered strawberry plant, in which the blossoms will *all* be *uniformly* so well provided with both sets of organs as to be followed by *perfect* fruit every year.

"8. That the only method of producing this delicious fruit, with any degree of certainty as to the result, is that now adopted by our intelligent cultivators, namely,—to set out plants of both the sexual classes; the relative proportions of which to be determined by experience, selecting such *pistillate* kinds as may prove of good size and flavor, and only so many *staminates* as may be necessary for impregnation.

"9. That the runners from a strawberry plant are as integral portions of itself, as the branches and buds of a tree; and therefore we may always propagate any variety by

this means, with as much certainty as we perpetuate any variety of apple or other fruit by grafting or inoculating."

The foregoing, we say, is the *pith* of the report, and is already familiar to the country at large, both by the numerous articles published on the subject by Mr. LONGWORTH, and others, and still more by the now widely extended reputation of the most abundant and excellent crops of strawberries, with which the Cincinnati market is annually supplied, by following this course of culture.

We have already stated in this journal, that whatever may have been our doubts, originally, as to the practical results of the Cincinnati mode, that is, in planting mainly *pistillate* sorts, with only about a fourth *staminates* to fertilize them, we have, after a fair trial, no longer any doubts upon the subject.

It is, we believe, *in this climate*, the only mode *which can be depended on* for obtaining every season a heavy crop of the large-fruited strawberries. We have, therefore, recommended it repeatedly of late in this journal, and have just re-written that portion of the eighth edition of our work on *Fruits*, in which a contrary ground was taken; adding, also, to the description of the varieties in that work the characters—*pistillate*, or *staminate*,—to designate their habits to the cultivator.

We say, *in this climate*; for it should be added, that though the Cincinnati mode repudiates many of the large pine strawberries, such as *Keen's Seedling*, as plants not to be relied upon for regular crops, yet they very wisely add—"that from some unknown causes, the pistils may be so well developed as to give a good crop, some years, and in some situations."

Now this is perfectly true; and it also explains what seems to be the stumbling

* We say *discovered*, because we are unable to learn that Mr. ARBIGUST ever heard of Mr. KEENE, or Mr. DUCHESNE, or that he was at all in the way of reading anything upon the subject.

block in the way of the Cincinnati committee; we mean the marvel, why great authorities and botanists abroad have been so slow to discover, or practice upon the value of the abnormal sexual character of many varieties of this plant. Granting that a variety once *pistillate* is always pistillate, and one *staminate* always staminate, it does not follow that somewhere, many, or perhaps all good staminate varieties, for "some unknown causes," do not bear good crops. These unknown causes we take to be *suited soil and climate for the development of the pistils* in the *staminate* sorts. In England, the damp climate and high culture favor this development; consequently, such a strawberry as *Keen's Seedling* maintains its place as the first variety for a good crop all over Great Britain for 20 years. (That it certainly would not do this if it did not bear well, *practical men* will admit without dispute.) In this country, the hot and dry climate renders *Keen's Seedling*, and most other *staminate* sorts, uncertain bearers, and thence often quite worthless, because the pistils are usually not well developed.

But there are soils and situations in the United States so favorable that staminate sorts do bear very heavy crops. Thus, we have once seen a heavier crop of large fruit on *Swainstone's Seedling*, (*staminate*;) than ever upon *Hovey's Seedling*, (*pistillate*;) and several cultivators in this state have been equally successful with *Ross' Phoenix*.

The difficulty is that the staminate "cannot be depended on." Sometimes they bear well—sometimes not; as the season proves hot or cool, and the soil is more or less well adapted. In England, we think they can be relied on. Hence the necessity, *here*, of the resort to the Cincinnati mode of depending upon the *pistillates*, (such as *Hudson*, *Hovey's Seedling*, &c.,) which, when

fertilized by a small proportion of *staminates*, always bear heavy crops; and hence the great value, for America, of the Cincinnati discovery.

We are, therefore, very glad to see the whole matter put in so intelligible and definite a shape as it has been by this committee, in the 9 *articles of faith* which we have just quoted.

There are two or three points of little consequence that we will notice in the report. In article 7, the committee say there is no "*perfect flowered* strawberry plant." In order to leave no doubt, however, what is meant by this hated word (we can scarcely write it without imagining a frown on Mr. LONGWORTH'S brow!) they add—"in which the blossoms will *all* be *uniformly* so well provided with both sets of organs as to be followed by *perfect* fruit every year."

Quite right; we agree fully with the committee. But is this the definition of a *perfect* (that is, an ordinary fruitful hermaphrodite) flower, as would be understood generally by botanists and gardeners? The apple, for instance, is a *Rosaceous* plant, belongs to the same family, and the blossom has the same natural structure as the strawberry. Now we think no one will deny that the apple bears a *perfect* flower, although, from various causes, all the blossoms may not set perfect fruit every year.

Again, leaving the acknowledged *staminates* and *pistillates* out of the question, there is still a small class of strawberries, well known in our gardens as the "*Wood Strawberries*" of Europe (*English Red-wood*, *White-wood*, &c.,) with small leaves, and small erect blossoms, which have, in the general sense, *perfect* flowers; that is, with the normal proportion of stamens and pistils, constant in their habit, (like those of the apple and pear,) and which always, in

good soil, with ordinary culture, produce good crops of fruit.

These strawberries, from their comparatively small size, do not usually enter into competition with the larger Pine strawberries; but we believe there is a practical cultivator in our neighborhood who will undertake to grow from a bed of them, of a given size, *as many quarts* in a season as any grower in Cincinnati can do with the best pistillate variety. They are evidently little grown in Cincinnati, as we find them scarcely mentioned in this report. Although they are certainly not *perfect flowered* sorts, in the sense defined by the committee, (has any *Rosaceous* plant such flowers?) yet we think they might have been ranked as such.

For ourselves, we place these sorts below the *pistillates* for heavy crops and fine large fruit; but from their permanent character, easy culture, and long succession of fruit, they are largely esteemed in this part of the country.

The *La Grange* (or Lafayette,) strawberry, noticed in this report, is, as we have proved, synonymous with the *Prolific*, or *Musk Hautbois*, as the committee suggest.

The "Hudson" strawberry, as noticed in this report, and as generally known at Cincinnati, is, we imagine, not the genuine Hudson, so long known in the Philadelphia and New-York markets. We suspected this from the exception which Mr. LONGWORTH made to our description of this variety; but the fact that it is in this report compared in *colour* to *Willey* and *Hovey's Seedling*, and that we have fruited the *Willey* from Cincinnati, which is widely different from the true Hudson, (though, as we learn from Cincinnati growers, not readily distinguished from their "Hudson" there;) all this leads us to suppose that the true Hudson is not cultivated about that city. Ours is the true "Hudson's Bay," accurately described and figured in the *London Hort. Transactions*, vol. vi., p. 159; in *Lindley's Guide to the Orchard*, *Prince's Pomological Manual*, and our *Fruits and Fruit Trees*; very dark colour, firm flesh and acid flavor, *with a neck*.

Mr. ERNST has just sent us plants of the Hudson of Cincinnati, and we shall, therefore, soon be able to compare this with the sort known by that name east of the Alleghanies.

FOREIGN NOTICES.

PULQUE—THE MEXICAN DRINK.—[We extract the following account of the manufacture of the favorite Mexican drink, from Buxton's *Adventures in Mexico* and the *Rocky Mountains*, lately published in London.

The American Aloe, (*Agave Americana*) from which it is made, is the "century plant" so well known in all our green-houses.—ED.]

"In the city of Mexico alone, the consumption of *pulque* amounts to the enormous quantity of 11 millions of gallons per annum, and a considerable revenue from its sale is derived by government. The plant attains maturity in a period varying from 8 to 14 years, when it flowers; and it is during the stage of inflorescence only that the saccharine juice is extracted. The central stem, which encloses the incipient flower, is then cut off near the bottom, and a cavity or basin is discovered, over which the surrounding leaves are drawn close and tied. Into this reservoir the juice distils, which otherwise

would have risen to nourish and support the flower. It is removed three or four times during twenty-four hours, yielding a quantity of liquor varying from a quart to one-half gallon. The juice is extracted by means of a syphon made of a species of gourd called *acajote*, one end of which is placed in the liquor, the other in the mouth of a person, who, by suction, draws up the fluid into the pipe, and it is deposited in the bowls he has with him for that purpose. It is then placed in earthen jars, and a little old pulque—*madre de pulque*—is added, when it soon ferments, and is immediately ready for use. The fermentation occupies two or three days, and when it ceases, the pulque is in fine order. Old pulque has a slightly unpleasant odor, which heathens have likened to the smell of putrid meat; but when fresh, is brisk and sparkling, and the most cooling, refreshing, and delicious drink ever was invented for thirsty mortal: and when gliding down the dust-dried throat of a way-worn traveller, who feels the

grateful liquor distilling through his veins, is indeed the "*licor divino*," which Mexicans assert is preferred by the angels in heaven to ruby wine."

GREAT MEXICAN CYPRESS TREES.—Far more interesting than the apocryphal tradition of the Indian palace, or the viceroy's castle, is the magnificent grove of cypress (deciduous cypress, *Taxodium distichum*) which outlives all the puny structures of man, and, still (1846) in the prime of strength and beauty, looks with contempt on the ruined structures of generation after generation which have passed away. One of these noble trees is upwards of seventeen yards, or 50 odd feet, in girth, and is the most picturesque, and at the same time, nobly proportioned tree, it is possible to conceive. It rises into the sky, a perfect pyramid of foliage, and from its sweeping branches hang pendulous, graceful festoons of a mossy parasite. There are many others of equal height among the Chepultepec grove, but this one, which I believe is called Montezuma's cypress, stands more isolated, and is therefore more conspicuously grand. From the summit of the hill, to which a path winds through a labyrinth of shrubs, a fine view of the valley and city of Mexico is obtained, and of the surrounding mountains and volcanic peaks. *Buxton's Mexico.*

TO PROMOTE THE GROWTH OF TREES.—Whatever mode of planting trees may have been adopted, the following means will greatly promote their growth.

Scrub the bark of the trunk and principal branches with a wet brush, (dipped in soap suds,) until there remains neither moss nor dead bark. Repeat this operation several times in a season, but especially in the months of April and November. In this way the perspiration of the tree is aided, and the bark is everywhere put in the best condition to absorb moisture, and the whole tree becomes more susceptible to the beneficial influences of the atmosphere.

It is especially fruit trees that this cleaning will most benefit.

As trees absorb the humidity of the air by all parts of their surface, it is particularly in a hot and dry season that this process is recommended, as it then puts them in a state to profit by the least rain, or even by the dew. Insects which are especially fond of trees whose bark is rough and diseased, are much less likely to attack those which have been freed from all dead and useless parts. When therefore the brush is not sufficient to completely render the bark smooth, it should first be carefully scraped with a knife, and afterwards well washed and scoured with the brush.

To be convinced of the utility of this mode of treatment, it is only necessary to compare the rapid growth of a tree so treated, with its neighbors left to nature. *Pfaelzische (German) Gartenzeitung.*

TO RESTORE SICKLY OR JAUNDICED AZALEAS AND OTHER PLANTS.—The following further application of M. GRIS' important discovery in restoring the health of plants with yellow and sickly foliage, noticed at length in our last, is well worthy of attention. Lemon and Cape Jasmine plants, as well

as sickly fruit trees, may be restored in the same manner.—ED.]

In the *Revue Horticole* of the 15th of October, is an excellent article on the culture of Azaleas, over the well known signature of M. VAN HOUTTE. Will you allow me to submit to your readers some observations on this subject?

M. VAN HOUTTE recommends, for Azaleas suffering from *chlorosis*, (yellow sickly state of foliage,) and in a languid state, the same treatment employed by all practitioners, namely, repotting, sheltered and shaded position, under a frame, &c., &c.

During the vacation, I was at Chatillon-sur-Seine: M. LECLERC, post-master and member of the committee of agriculture, begged me to submit to a regimen of iron, seven or eight Azaleas, which, in spite of the treatment recommended above, had been for two or three months, in a decidedly jaundiced and suffering state. Two or three of them were dying. On the first of September, at a temperature of 20°, the plants in question were immersed, leaves and branches, in a solution of *sulphate of iron*, (common copperas,) half a dram to a quart of water, or 1oz. to fifteen gallons, and withdrawn after several seconds, being entirely and uniformly wet. Eight days after a decided amelioration was perceptible. The operation was then repeated, a small quantity of a stronger solution of iron being spread on the earth in the pots.

Under the influence of this double absorption, external and internal, the Azaleas, after fifteen or twenty days, would not have been recognized for the same plants; not only had they regained their green and healthy appearance, but at the extremities of several branches, young green leaves were observed, with all the signs of a vigorous growth.

The same experience occurred at the same time and place, with equal success, on some *Calceolarias*, which had been in an equally sickly, pale and dying condition.

I doubt if any other method would give as rapid and perceptible results, obtained with so little trouble and expense. This *medical practice* is so simple that the most humble gardener's apprentice could easily become enough of a doctor, to apply it. It is merely necessary to keep strictly to the doses indicated; to use the solution of iron immediately after the copperas has dissolved, that is to say, before it is affected by a deposit of rust, and to operate with the temperature sufficiently high. Below 12° or 14°, (60° or 65° Fahrenheit,) the effects are much less sensible, sometimes not perceptible. They would be still more remarkable and immediate, if the temperature were still higher. If the sun, however, should be very hot, it would be advisable to try the experiment a little in the shade.

Finally, these experiments with sulphate of iron, which have occupied me since 1840, have been pursued for three years at the Museum of Natural History, in Paris, under the benevolent auspices of the professors of botany and culture. This new treatment has been applied to a number of individual plants belonging to the most different natural families, some in the open air, some in the orangery, some in the hot-house;—and the results obtained daily, leave no doubt of the specific action of *sal*

of iron on jaundiced vegetation, (*chlorose végétale*.) EUGÈNE GRIS, *Revue Horticole*.

PEARS ON QUINCE STOCKS.—I must refer your correspondent "Abdalonymus" to my reply to "Constant Reader," given at p. 372, 1847; he will there find the results of my experience, which will spare my pen, but I feel that I ought to firmly contradict his assertion—"It is a fact that few sorts of pears will grow immediately on quince stocks." I can give him a list of more than 200 sorts that grow freely without double working. The Virgoleuse Pear is very inferior to other sorts, the names of which I have given in the letter above referred to for double working; for walls or espaliers they are not "useless;" let "Abdalonymus" go to Mr. Thompson at the Chiswick Gardens, and ask him to show him the fine trees in the west wall there, some 25 years old, and looking as if they would live for a century. Some of our finest old varieties of pear, such as the Crassane and Colmar, most certainly require a wall to bring them to perfection, as is also the case in the northern departments of France and in Belgium; but our best new varieties give the very finest fruit from pyramidal trees on the quince stock.

It is not a fact "that pears are far more liable to canker upon quince stocks than upon their own;" quite the contrary, as I can prove to "Abdalonymus" if he will come and see me. Very many sorts that canker and are unfruitful here, when grafted on the pear stock are fruitful and healthy in the highest degree when worked on the quince. I will here venture to repeat what I have before written in your pages, that the "Louise Bonne, of Jersey," grafted on the pear here, and growing in a light sandy loam, seldom or never bears clean fruit; they are always spotted and diseased, and its shoots are often cankered and unhealthy. I have this month taken off the heads, for the purpose of regrafting some fine trees 15 years old, on this account, and have just finished a plantation of 2000 trees of this sort on the quince to grow fruit for Covent Garden market, only because it does so well. Your correspondent does not give any account of his experience; his letter seems to me all empty assertion.

Pears upon quince stocks do not "require several years before they come into a bearing state;" they often bear the second year from the bud or graft, and the third year they will bear abundantly. I am not at all surprised at your correspondent being "completely" baffled; he has not persevered as I have. The fruit from pyramidal trees on the quince occasionally root-pruned is not "small and deficient in juice;" the finest flavored pears I have ever tasted in this country and in France have been the produce of trees of this description; there is always much more piquancy of flavor than in pears from walls. I can state rather a stubborn fact in support of this; I sent last October some sieves of Louise Bonne of Jersey to Covent Garden market. My salesman reported to me that "they were the best he had ever seen or tasted."

Now, as to duration, "to die in a few years" will not be the fate of trees worked on the quince; witness the healthy trees in the gardens of the Hor-

ticultural Society at Chiswick, which are now more than 20 years old. I have seen trees on the continent more than 40 years old equally healthy. Surely this is enough of duration for any garden trees, and for any man of moderate wishes.

I half suspect that I know "Abdalonymus," and that some years since he was an unsuccessful cultivator of the pear on quince stocks, owing to his employing the common pear-shaped quince, raised from layers, which is a most unfit stock. He does not perhaps know that there are four or five varieties of the quince, and that he used the very worst sort for a stock. He sold his trees, and I should think suffered in reputation. This, I fear, has made him crochety and envious. I regret to observe this, and shall feel much pleasure in pointing out to him the different varieties of the quince, and in particular that which is most favorable to the pear. By the way, an error that the Portugal quince is alone the proper stock for the pear has been extensively propagated; this, I think, has its origin in the assertion of Comte Lelieur, in his "*Pomone Française*;" he there mentions it as being the best stock, but in describing it he gives the description of the Angers quince, a variety with small and pointed leaves, which strikes readily from cuttings. The true Portugal quince has broad downy leaves, and does not strike freely from cuttings; neither does the pear succeed well grafted upon it; it is rarely seen in the French nurseries, and never employed as a stock.

I have above spoken of the freedom from canker of many sorts of pears when grafted on the quince. So much is this the case, that only the other day, when looking over some very healthy free-growing root-pruned trees, I was almost vain enough to think that I had discovered both the cause and the remedy for that perplexing disease. On one side were some pear trees (not root-pruned) grafted on their own stocks, which after having grown freely for several years had commenced to canker; the disease indeed seemed to be making rapid progress. On the other side were some root-pruned pear trees, of the same age, on quince stocks, full of bloom buds and health; not a spot or speck of canker to be seen on them. One of my laborers was present; I bid him dig around the first named pear trees, so that I could see their roots. I found them all making their way almost perpendicularly downwards, through a sandy loam into a calcareous sand, and in some places into a stiff, reddish, tender clay. They were evidently getting out of the influence of the sun and air; the consequence is disease in the branches.

I turned to my root-pruned trees on the quince stocks, uncovered their roots, and closely examined them. Every root and fibre was near the surface, ready to receive the benefits of surface dressings in winter, liquid manure in summer, and the influences of sun and air. The consequence is health and fertility. These are, I trust, facts worthy the consideration of the physiologist.

A few words more about pyramidal pear trees on the quince stock and I have done. In the "good old times" it was customary in planting common gardens to stick in dwarf trees here and there, either Willow-like one year old grafts or bushy trees

two or three years cut in; if vigorous growing sorts these soon grew into large spreading trees, shading a large space of ground. If, on the contrary, they were delicate and rather tender, their shoots in a few years commenced to canker, and presently the trees would be a mass of disease. Now pyramidal pear trees on the quince stock, and apples on the paradise stock, must not be stuck in in this manner; they should be planted—and planted well, and have summer pinching and winter root-pruning if inclined to grow too vigorously; surface dressing in autumn and liquid manure in summer will also be found highly advantageous. In short, they require culture; in deep, rich, fertile soils, this surface dressing and liquid manuring may be dispensed with, but in thin, dry and light soils it is quite indispensable, more particularly in thin soils resting on chalk; in such soils, even with the best culture, success will not always attend the efforts of the cultivator; but I must honestly confess that I have not yet seen any failure. The following sorts of pears, I am inclined to think, will succeed on the quince, even on the most unfavorable soils; they are planted here in stiff, dark, adhesive clays—in light, calcareous, reddish sand—in sandy loam, and in a stiff, red loam (such is the great variety of soils in my nursery,) in all they succeed admirably, and give abundance of fruit of large size and fine flavor: Beurré Ananas, Beurré d'Amanlis, Beurré d'Aremberg and its congener Soldat Laboureur or Orpheline d'Enghien, Beurré Capiaumont, Beurré Diel, Beurré Easter, Beurré Langelier, Bon Chretien (William's,) Chaumontelle, Citron des Carmes, Colmar, Crassane, Delice de Hardenpont, Doyenné d'été, Doyenné (white,) Duchesse d'Angoulême, Fortune (Parmentier,) Glout Moreceau, Gratioli of Jersey, Louise Bonne of Jersey, Napoleon, Passe Colmar, Saint Germain, Van Mons Leon le Clerc, Vicar of Winkfield, Wilhelmine, &c.

I must confess that I take great pleasure in the culture of pyramidal trees—they are so productive, so “gardenesque,” so come-at-able, their fruit is so easily gathered, the progress of the trees in all their stages of growth is so under the eye of the cultivator that I feel assured it must make rapid progress, in spite of such cavillers as “Abdalonynus” and “Constant Reader.”—*Thomas Rivers*. [Mr. Rivers is perfectly right. Ed.] *Gard. Chronicle*.

It is a well-known fact that the DISEASES OF PLANTS, like those of animals, are occasionally epidemic, prevailing over the vegetation of large districts; and the question has often been asked—Are they contagious or infectious?—Are they propagated by matter engendered in one individual and communicated to another? We shall endeavor to answer these questions; and we think that the conclusion must be arrived at, from the evidence before us, that the diseases of plants may be, like those of animals, produced by contagion.

Amongst animals, diseases are engendered by the application of organic matter in three forms: 1st, that of animals, as in the case of the itch-mite, rot-worm, and the various forms of epizoa and entozoa; 2d, that of vegetables, as in the fungi of scald-head, the conserved of impetigo, and other cutaneous diseases; 3d, that of organic cells, which

do not give evidences of the possession of a specific animal or vegetable life, as in the case of small-pox, measles, scarlet fever, typhus fever, &c.; and it is these diseases which are most frequently epidemic.

The same agents are capable of producing diseases in vegetables. The attacks of the aphids, the scolytus, and other insects, are well known as producing extensive destruction of herbs and trees over large districts; and the most frequent pestilences that desolate the cultivated plants of our fields are produced by various forms of fungi. The agency of fungi is so great in producing blights, that some writers have been inclined to attribute all the diseases of the vegetable kingdom, not produced by insects, to this cause; and the peculiar characters which the cells of plants assume under disease have been named as though they were so many species of fungi. We are indebted to Unger, a German botanist, for having pointed out this error, and the real source of the supposed forms of fungi. There is not, however, any doubt that the greater number of the most destructive pests of our fields—as those known by the names of smut, brand, mildew, rust, &c.—are produced by the introduction of the seeds of fungi into the tissues of the affected plants. With the history and nature of these, we are happy to say we shall be able to make the readers of the *Gardeners' Chronicle* acquainted, through the able pen of the Rev. Mr. Berkley.

These cryptogamic diseases of plants must be regarded as contagious, since they are produced by the contact of one portion of organic matter with another. But the diseased cells of a vegetable are capable of communicating their diseased action to healthy cells, just as the cells from an animal affected with small-pox are capable of giving that disease to another. If a healthy plant of Cactus be inoculated with some of the fluid from a plant affected with moist gangrene, diseased action will immediately commence, and extend more or less rapidly according to the condition of the plant thus inoculated; and this is the case with some other forms of vegetable disease. The kind of action thus established is analogous to that which occurs when a small quantity of ferment is introduced into a saccharine fluid, the consequence being the impartation of a new character to the particles of the fluid, and an entire change in the relation of its chemical constituents. In order that diseases may be thus produced, it is not necessary that the contagious matter be conveyed from one plant to another in a tangible form, but the diseased cells may be conveyed through the medium of the air, in the same way as the sporules of fungi which produce blights.

In treating of contagious diseases, or those produced by animals and plants, most writers have paid almost exclusive attention to the agent producing the disease, not taking into consideration the condition of the plant attacked. In human beings it is well known that only a small proportion of persons exposed to the influence of contagion will take the disease that it is calculated to produce. There is, in fact, in both animals and plants a condition of the tissues of the individual, brought on by circumstances, which favors the production of disease, and it is alone in our power over this condi-

tion that we can expect to control the visitation and destruction of epidemic diseases. That such a condition of plants exists is, we think, proved by the fact that epidemic diseases arising from the attacks of insects and fungi do not occur in the same districts in following years, although there can be no doubt that there are more of the seeds of disease, as the ova of insects, the seeds of fungi, &c., in the vicinity of crops, in the year following an attack of the disease, than in years either previous or subsequent to the attack. We think, then, that there is reason to conclude that there are constantly in the atmosphere germs which are capable of producing disease in a plant, provided the plant gets into a condition to be attacked.

The circumstances that would produce such a condition of a plant as to render it liable to the development of epidemic diseases, are of a general nature. The state of the atmosphere in relation to moisture, the prevalence of unseasonable, hot or cold weather, the amount of light, and probably the electrical condition of the air and earth, are the circumstances which act on plants generally, and which may produce a state in which insects, fungi, or organic germs, may generate disease.

A more limited cause of predisposition to contagious disease is the natural decay of a plant or parts of a plant. Thus we find that the leaves are more exposed to the attacks of fungi just before the fall than at any other time. The trunk and branches of a tree become most frequently gangrenous when they have attained maturity. Soft fruits—as apples, pears, oranges, melons, grapes, &c., are more exposed to the attacks of disease the riper they get. Ripe fruit is already entering into a state of decay, and this process is hastened by the introduction of the seeds of fungi or the cells of diseased tissue.

Can the epidemic diseases of plants be averted? We think in some cases they may, and in others very much mitigated. We cannot control the sun and the wind, nor prevent electrical accumulations and escapes; but we may act in anticipation of their influence, and, if we cannot altogether prevent the occurrence of epidemic diseases among plants, we may do much to prevent their destructive consequences. Plants which have the most perfect health will always withstand depressing or exciting influences best, and the most carefully cultivated farms and gardens will always be those which, in the long run, will suffer least from blights of any kind. It is not our object here to point out the means of keeping plants in a healthy state; but we would say to farmers and gardeners—take all care that your plants are healthy; be careful of stimulating them with heat, light, water, or manures; be equally careful of depriving them of a sufficient quantity of these things; and guard against poisoning them by noxious gases or improper manures. The influence of particular varieties of plants, and the age of them, in producing disease, we shall discuss in a separate article. *L. E. Gard. Chronicle.*

BURNT CLAY A GOOD MANURE.—It has been the custom here for some years, in spring, when the operations of pruning, &c., are ended, instead of suffering the rough branches to lie about, presenting an untidy appearance, to collect them in a

heap, and build a wall of turf round them in a semi-circular form about three feet high. They are then set fire to, and when about half burnt down, such weeds and other rubbish as collect in every garden, and will not readily decompose, are thrown on the top, and earth is gradually cast up as the fire breaks through.

During the first two or three days no ordinary care is requisite to keep the pile on fire; but after this, if the fire is not allowed to break through and thus expend itself, it will certainly spread through the whole heap, and almost any amount of soil may be burnt by still adding to the top. The soil we burn is the stiffest loam that can be found within our limits, and is rather of a clayey nature; also turf from the sides of ditches and ponds, in itself naturally sour and full of rank weeds.

The clay thus burnt has been found beneficial in every instance. In black garden mould, where peach trees were disposed to sucker and canker, despite of animal manures and drainage, two or three annual dressings of burnt earth appear so to have altered the soil that they now grow clean, vigorous and healthy, are free from suckers, and produce roots completely matted with fibre. The like success has attended its application to other fruit trees.

During the summer of 1842, six beds of tea-scented roses growing in an alluvial loam (the adjacent fields are of the same soil, and grow large crops of wheat and potatoes, but the particles of soil run together after rain, and present a smooth cemented surface) were manured with the following substances, viz.—1, bone-dust; 2, burnt earth; 3, nitrate of soda; 4, guano; 5, pigeon dung; and 6, decomposed stable manure. The guano produced the earliest visible effects, causing a vigorous growth, which continued through the season; the flowers, however, were not so abundant, and the shoots did not ripen well, and were consequently much cut with the frost. The bed manured with burnt earth next forced itself into notice; the plants kept up a steadier rate of growth, producing abundance of clean, well formed blossoms; the wood ripened well, and sustained no injury during winter. The results of the other manures were not remarkable—acting as gentle stimulants, the nitrate of soda and bone-dust least visibly so—although they were applied in the quantities usually recommended by the venders.

From the fact of the beds of roses being all planted at the same date, and their progress being carefully watched, I would suggest the application of burnt earth as an excellent manure for roses in adhesive soils, as well as for fruit trees where disposed to canker. Whether it acted by furthering drainage, or by opening the soil to the fertilizing influences of the atmosphere, or by fixing the ammonia conveyed to the soil by rain, I do not pretend to say, but its value is sufficiently apparent. I believe it is considered that the vegetable matter contained in soils is destroyed by the act of burning; and I do not think the remains of the materials used in combustion could exercise any extended influence, as the quantity compared with the earth burned is so small, and the earth comes from the heap burnt red and hard, and a great portion quite

free from the remains of the substances used in ignition. *Gard. Chronicle*.

BURNT CLAY.—I can fully confirm the statement of Mr. W. Paul, of Cheshunt, which appeared in the last week's *Gardeners' Chronicle*, as to the good effects produced in gardens, where the soil is strong, by the use of burnt clay or marl mixed with the ashes of vegetables and the charred branches of trees. I have had for some time past several of these burning heaps in the environs of my garden, which produce us in succession a very valuable manure; they are easily kept in a state of combustion, and all the care they require is, to cover and surround them occasionally with fresh clay or marl, that they may not burst out into an open flame. My gardener sowed two beds of onion seeds of the Globe, James' Keeping, and Strasburg sorts, mixed together, about the 10th of March last, with 1 lb. of seed to each bed. The beds were each of them 18 yards by 12 yards, and one of them was manured with good stable dung; the other by this mixture of burnt clay and vegetable ashes. The produce of the first did not exceed five bushels of an inferior size, the greater part having been destroyed by the larva of the onion fly; whilst that of the latter was 20 bushels of onions, as large as those imported from Portugal. Another remarkable circumstance is, that the former have not kept well; but the latter are as sound as possible, not a single bulb in the strings showing the least appearance of decay. The same burnt mixture has been applied with equal success in my fruit garden. I had observed a great decrease in my crop of apricots for several years past, and upon a careful investigation as to the cause, my gardener and I agreed that it must be owing to the tenacity of the border; we therefore had the old soil removed, and a quantity of this burnt mixture with a little fresh loam substituted for it. My gardener planted the border so renewed with runners of Keen's Seedling, in rows; they became strong plants by June, when they flowered and produced an abundant crop, and all my apricot trees were covered during the summer with well ripened fruit. I am so fully persuaded of the excellence of this kind of manure, that I intend to adopt it generally on my farm. It will there have a double advantage; for I shall be enabled to save the farm yard dung for composts, and I shall have the gratification of seeing my hedges neatly trimmed and my ditches well cleared out. Our stiff soils will be also rendered more friable, and will not suffer as they now do from the retention of wet on the surface. *Oswald Mosely. Rolleston Hall, near Burton-on-Trent. Ibid.*

DURABILITY OF OAK CUT IN WINTER.—We have a saying in Surry, that the sap of winter fallen oak is as hard as the heart of that which is thrown in in the spring. There may be a little exaggeration in this saying, but it serves to show the common impression of the comparative durability. *A. C. P. Ibid.*

BUDDING AND INARCHING THE VINE.—Wishing to increase the number of Muscats of Alexandria and Cannon Hall Grapes, I cut down a few vines; one-half of them was budded, and the other was

inarched. To test the merit of each method fairly, both budding and inarching were done at one period. The result is, that by the former method, bearing wood has been produced nearly double the strength of that by the latter. In budding, the following is the method I pursued:—The old vines were cut down in the autumn of 1842. They were laid in March, 1843; as soon as they had made shoots a few inches long, two were selected on each vine, and all the others were taken off. These were tied in, and laterals were pinched regularly off them until May. The young shoots were then about two-thirds up the rafters, and nearly full grown in thickness at the base, but not ripened or turned brown. At that period the buds taken from young shoots with leaves not larger than two inches in diameter, were put on; the wood was left in the buds; they were inserted in the usual way, and tied firmly with a piece of matting. In the course of ten days or a fortnight they were united, the matting was undone, and the shoots were cut down to the buds; all shoots below the buds were taken off as they made their appearance. After this was done they grew away very strong and rapidly. Some of the buds showed fruit, but this was pinched off. The leaves attached to the buds never flagged. *W. G. Ibid.*

GERANIUM LEAVES FOR WOUNDS.—The leaves of the pelargonium are, as everybody knows, strongly scented; some smell of rose, others of lemons, apples, etc.; there are also other sorts which, when bruised, have a nauseous and rather disagreeable odor. All the species and varieties of this genus contain a large quantity of essential oil, which is usually fatty. There are several sorts of geraniums, which are cultivated in the open air in the south of France, and particularly at Nice, for the purpose of extracting the oil, which is sold to the perfumers. The leaves of all pelargoniums have also the property of quickly healing cuts, places where the skin has been rubbed off, and other sores of that kind. You take a leaf or more of the pelargonium, which you bruise on a piece of linen; you then apply it to the sore place, and it often happens that one leaf is sufficient to heal the wound. It sticks closely to the surrounding skin, helps to close the flesh, and heals the wound in a short time. I have often tried this method, and found it quite successful; and others, to whom I have recommended it, have given an equally favorable report. The *Pelargonium zonale*, [common horse-shoe geranium,] one of the oldest green-house plants, is much more efficacious than others of the same kind; its shining fleshy leaves render it far preferable to those which are ribbed and downy. *Revue Horticole.*

THE RIPENING OF FRUITS.—A prize having been offered in the year 1821, by the French Academy of Sciences, for a proper elucidation of this important and highly interesting subject, three papers were received; one of which written by M. Berard of Montpellier, gained the prize, and was afterwards published in the *Annales de Chimie*. M. Berard's memoir is exceedingly long and turgid; the following summary of useful facts is, therefore, presented to the reader.

Fruits do not act on the air in the same manner as leaves do : the results of the action of the former (both in light and darkness) are at every instant of their formation and growth, to suffer a loss of carbon ; which, combining with the oxygen of the atmosphere, forms carbonic acid. *The loss of carbon is essential to the ripening of the fruit ;* for, if the latter be placed in an atmosphere deprived of oxygen, the function of throwing out carbon will become suspended, the *ripening stopped*, and if the fruit remain attached to the tree or plant, it will dry up and die.

Fruits which are enclosed in shells, however, may and do ripen ; for the membranes which form the husk are naturally permeable to the air : indeed, the communication between the external and internal air is so free, that both have always been found to be of uniform composition ; that is, when analysed, the atmosphere within the shell has furnished the same relative quantities of oxygen and nitrogen as the air which we breathe.

When fruits separated from the tree (even though capable of completing their own ripening) are placed in atmospheres or media deprived of oxygen, they will not ripen ; the power of ripening, however, in such case, is only *suspended*, and may be induced to act, or be re-established, by placing the fruit in an atmosphere capable of taking carbon from it. If the fruit, however, remain too long in the deoxygenated situation, it will have lost the power of ripening : even though it preserve nearly the same external appearance.

From these facts the inference is plain, but highly important, viz : that most fruits and especially those which do not require to remain long on their parent trees, may be preserved for a considerable time ; and thus their utility and the pleasure which they afford be prolonged. The most simple process consists in forming a paste of lime, sulphate of iron and water, placing the same at the bottoms of glass or stone bottles, or jars ; and then introducing the fruit pulled a few days before it would otherwise have become ripe. Such fruits, however, are to be kept from the bottoms of the bottles or other vessels, and as much as possible from each other : at the same time care must be taken to close the bottle or jar with proper corks and cement, either with or without bladders or tin covers, according to circumstances. Persons at all acquainted with chemistry, will perceive that fruits thus placed, are situate in an atmosphere entirely freed from oxygen, (which has been absorbed by the paste,) and, consequently, that they may be preserved for a longer or shorter space of time, according to their nature : Peaches, Apricots, Prunes, and several species of plums, from *twenty days to a month* ; Pears and Apples for *full three months*. If either of these fruits be withdrawn from their confinement, after their respective periods, and be exposed to the air, they will ripen extremely well ; but if these periods be much exceeded, they will undergo partial alteration and will not ripen at all.

It is well known that when ripe fruit is long exposed to the air, it will rot and decay ; in such cases the fruit first changes the oxygen of the surrounding air into carbonic acid gas, and then the

same gas is evolved from its own substance in a large quantity. Indeed, the presence of oxygen gas is necessary to the rotting or decay of fruits ; for, when it is absent, a different change takes place. When the fruit cannot ripen except on the tree, its ripening is not caused by any chemical change of its substance, whilst still green ; but by the change or addition of *new substances* furnished to it by the capillary vessels of its parent stem ; and it is a remarkable and well ascertained fact, that *when fruits appear to have lost the acid taste and qualities which they possessed in their unripe state, it is because that taste is hidden by the large quantity of sugar which they receive during the process of ripening.*

In those fruits which ripen *after separation* from the tree, likewise, the quantity of sugar is found considerably to increase : in such cases, however, it must be formed at the *expense of the substances previously composing the fruit.* Gum, lignin, and water, are the only substances present ; the proportions of which diminish during the process : it is, therefore, natural for us to conclude, that it is those portions of these substances which have *disappeared*, that have been converted into sugar ; and as the lignin contains the greatest quantity of carbon, we must conclude that it is from *it*, the oxygen takes the carbon in order to form carbonic acid—a change so essential in the ripening of fruits.

It is difficult to suppose that in those fruits which ripen early on the tree, *all the sugar* should be sent into the fruit from the plant : it is much more probable that the substance of the fruit acts upon the air—or *vice versa*—and thereby forms sugar, like those fruits which have been separated from their parent stems ; but not in sufficiently large quantity to render them *identical in quality*. In such cases, it is necessary that recourse should be had to the tree itself, to complete the process of ripening.

In conclusion, it remains to be stated, that the alteration which the *lignin* undergoes during the process of ripening, or *saccharification*, continues during the decay of the fruit, under any circumstances. During the process of decay, the *lignin* becomes brown, and its decomposition, as well as that of the gum and the water, occasions the formation of comparatively large volumes of carbonic acid gas. The sugar also, (if any exist,) becomes decomposed at this time ; and, to its *disappearance*, in a great measure, is to be attributed the peculiar taste of decayed or rotten fruits. The sugar, during its decomposition, likewise, doubtless gives rise to the formation of carbonic acid ; a great part of which, combining with the hydrogen evolved from the decomposing water, forms *carburetted hydrogen*, which is the main source of that ill or miasmatic taste and smell, so characteristic of vegetable putridity. *The Gardener.*

THE LAST OF THE SUPERLATIVES.—The following unique description of the new Dahlia, sent out this season by the Metropolitan Union of Florists, London, (taken from their circular,) is the best specimen of floral grandiloquence that we have yet seen. Certainly Holland, in the days of the tulipmania, produced nothing more *exaltée*. Fortunately, buyers in England are able to look to the opin-

ion of the horticultural societies, gardening journals, and the number of prizes that a new variety has gained at the shows, as better guides in these matters—and judging from these there is little doubt that this is really a very fine new sort.—Ed.

THE GOLDEN FLEECE. (UNION.)—Golden nankeen buff, tinted with orange. A flower of so much rarity and beauty, matchless petal, perfect symmetry, producing blooms $4\frac{1}{2}$ inches in diameter, unusually double and in circles closely rising above each other, whereby the edges only are visible, which gives it a revolving appearance; full constant centre, and well up; the color is so bright and enchanting, it would exhaust the power of any adjectives to promote the idea, and no pencil can do justice to its hue. It may be likened to sunset, when the orb of day reflects upon the verge of the clouds the memory and image of its departing glory. Mr. Salter, an eminent French cultivator, pronounced it to be *orange glace*, which, from its metallic lustre, might be termed *or en flamme*, and, having seen it growing, will confirm its superior habit of plant and bloom, which latter is alike erect, constant, and profuse. The stock is very limited. No discount. Plants, 10s. 6d.; ground roots, 5 guineas.

FIGS.—With regard to these, I beg to offer a few remarks on what I have observed and put successfully into practice. The year 1818 was remarkable for abundance of figs, on account of its long duration of heat and drought. Happening to call during that year at the Duke of Richmond's Gardens, Goodwood, near Chichester, in August, I was much pleased, and at that time quite astonished, to see a row of very large standard Fig trees loaded with the greatest abundance of fruit, both ripe and unripe, in the highest possible perfection. The soil there is shallow, on a bed of chalk. I likewise observed during the same year abundance of Figs in many of the cottagers' gardens in Sussex, produced on standards that were growing in the same kind of shallow soil, and where the bottom was nothing but chalk. Figs appeared to be no luxury in that quarter. In Kent I have observed good Figs and very fruitful trees on a similar bottom. At the late Lord Audley's Gardens, Belvedere, Erith, I have observed the most abundant crops of fruit, raised for several years in succession in the highest state of perfection, where the soil is shallow and dry, and where the subsoil is nothing but a rock or bed of pebbly gravel, called there pea-gravel; after a heavy rain, scarcely a particle of earth was there to be seen on the surface. I have long observed that shallow dry soils are the best for producing good crops of Figs, and where the trees have been planted without much care, and allowed to grow without much pruning or nailing, which does not at all suit the Fig. Such places as stable-yards, farm buildings, in any dry corner, amongst stones, chalk, brick-bats, or lime-rubbish, where they are well trodden or paved about the trees, are the places to see fine crops of good Figs. Trees in such situations have a number of joints in the length of one inch of young wood. Over-luxuriant trees never bear abundant crops. The wood of a Fig tree that is long jointed, pithy, and soft, does not produce Figs in perfection. The growth

of the Fig requires to be checked, if fruit is wanted. In preparing for growing Figs, instead of trenching the ground, I should recommend merely forming a flooring under them with concrete, brick-bats, stone, chalk, gravel, lime-rubbish, or with whatever is most convenient to be had, if the bottom is not naturally chalky, rocky, or gravelly. Those that are troubled with over-luxuriant Fig trees might practice the following method, which I have myself done with good success:—Cut a trench, three or four feet wide, in front of the trees, (if against the wall, or all round them, if they are standards,) below all roots, which should be cut clean off as the trench is dug, then fill up with any of the above materials that can be procured, pouring a quantity of grout amongst it as the filling up proceeds, or the roots will soon get through it; otherwise, build a wall, as recommended by Mr. Errington. Figs require to be planted high, and the depth of soil about them should not be more than one foot. If the season is very dry when they are ripening their fruit, the trees will be much benefited by giving them a good soaking of water, as that is the time when they will be benefited by water. *Observer. Gard. Chron.*

GARDEN WALKS.—Permit me to remind your readers of the following plan for making garden walks, which has now been published by you so long as to have been forgotten by many. Procure a quantity of road sand, or similar powdery material (finely sifted lime rubbish will do,) and let it be thoroughly dried, so that it feels like dust when handled. Also sift out of the cinders of the dwelling-house, &c., the finer parts, and let them also be made perfectly dry. Mix these carefully, two parts road sand to one of ashes. In a dry place on a dry day, spread a quantity of the mixture as a bricklayer spreads his lime, with a hollow in the middle. Into this hollow pour some coal-tar boiling hot; incorporate the whole with a shovel, as if making mortar, and when a thick paste spread it three or four inches thick over the ground laid out for the walk. The ground should be previously beaten as level as possible. Powder it all over with dry and rather coarse sand, after which a few passages of the roller will press it level. Leave it for a few days to harden, after which the walk is fit for use, and will last for very many years. The composition must be made and laid down in very dry weather. As it appears to be quite hard and impervious to water, it might probably be used advantageously in cattle boxes, dung pits, and farm yards, to prevent the liquid part of the manure escaping, and would serve as an answer to the question once asked in your columns.—“What is the best and cheapest flooring for a pigsty.” *Gardeners' Chronicle.*

DIRECTIONS FOR CUCUMBER GROWING FOR THE MARKET.—My seed pit is built of solid 4-inch brick work laid in cement: it holds 200 4-inch pots, and has two lights; but of course the size should be in proportion to the demand. The laps of the glass are all puttied, and painted with anti-corrosive paint, which is cheaper and lasts much longer than any other paint; no putty is employed, except in the bedding of the squares, they are merely paint-

ed, and no drip ever enters the pit. The pit is bottomed with a few rough boards, and over these about 3 inches in depth of mould is put, on which to set the pots level. The dung is applied fresh from the stable-yard, making a very substantial lining about two and a half feet in width at the bottom.

As soon as the pit has become sufficiently heated, the seed is put into a pan of water, in which it is allowed to steep for 24 hours; after which it is sown in pans of two inches deep, in dark coloured mould of a light nature, fresh from a pasture which has been under grass for many years. As soon as the plants are up and the seed leaves separated, they are potted off into 4-inch pots, using the same mould as before with a bit of turf for drainage. Two plants are put into each pot, placing the plants in the pit east and west, and no water is given for three or four days, in order to prevent the tender stems from damping off. Air is given day and night both back and front, and the heat is kept up at night to 65° and by day to 70°. The plants are shifted right round every three or four days, and they are watered when required with soft tepid water.

As the plants only remain in the nursery bed for about three weeks, the large pits should be prepared for their reception by the expiration of that time. This is effected by lime washing their insides, hunting out all woodlice, and by covering the pipes which traverse the middle of each pit at the bottom for bottom heat with a layer of oak faggots; putting some rough dung or straw over the sticks to keep the mould from mixing with the faggots. The mould, rough from the fields, is put in, so as to form a ridge in the centre of the pit to the depth of at least 16 inches, leaving the top of the mould about 2 feet from the trellis. The fire is lighted at least six days before the plants are put out; there being four dozen lights to one fire, and consequently much cold water and mould to heat. As soon as the mould is heated through, the plants are planted out immediately under the centre of each light, inserting them in the mould up to the seed leaf, and placing a stick to each plant reaching the trellis. The latter is formed by a strong stick under each rafter, and by hazel rods about 4 feet long, placed 5 or 6 inches apart. As soon as the plants reach the trellis their heads are nipped off. Saddles on the pipes made of zinc are kept full of water, and the plants are frequently watered with diluted dung water in a tepid state. Plenty of air is given, and the heat is kept up by day to 70°, and by night to 65°. The shoot is pinched off at the fruit, and not at the joint above the fruit, as is the practice with many, and by this mode the frame does not get so full of useless vines. Keep the male blossoms cleared off at all times, and after the plants come into hard bearing every encouragement must be given them, administering manure water freely. We have 100 lights, which require a great deal of tepid water up to the middle of June.

Our plants are generally in September just as healthy as ever, even after cutting three times a week all the summer, and then ripening the seed. We have cut on the 15th of April out of 48 lights 70 cucumbers at one cutting, averaging in length from 12 to 16 inches; and in April this year I cut

320 altogether. The quantity of water used during bright sunshine with the plants in full bearing, is about four gallons a week to each light, and this is always applied by sprinkling every day over head, at half past three, or about that time, and then of course the lights are shut down close. The water used is diluted manure water, obtained in the following manner: Water is thrown upon the fresh dung from the stables, and a tank being at hand, the water drains off and carries in solution the strength of the dung. I mix one gallon of this with three of water that has been exposed to the sun. I never in the height of summer water with cold water, for I am persuaded that half the diseases in cucumbers arise from watering with cold water from tanks not sufficiently open to the sun and air.

The admission of air is also a matter of paramount importance. I never give air at the front of the pits for this reason, that the moment you admit air in front and back a dry hot current is produced, which in cucumber growing above all things should be avoided; but if air is given at the back only, a circulation of heated air something after that under the Polmaise system will be maintained. And be it remembered, the older your plants the stronger heat they require. Shading is of course necessary in the first instance, until the plants gather sufficient strength, but it is only half starved, diseased, and badly rooted plants that require shading all the summer. To preserve them from woodlice, keep four or five toads in each pit, and after the plants have reached the trellises; the young woodlice among the leaves may be caught by placing small pots full of hay on a ledge under each light. These I examine every day, and by this means find that the woodlice are very much reduced in number. I have paid six shillings a dozen for toads, which shows the value I place upon these commonly despised but really useful animals.

I have bought all the new cucumbers advertised, but I may, without fear of contradiction, say that I have never found one so early and so productive as my Black Spine. I have now had it in my possession upwards of fifteen years; it took prizes at Ipswich in 1831, where it obtained first and second prizes at the same show. In 1834 it took the first prize at Chiswick, and in 1836 the first at Barnet. And since then for seven years past it has been the best at the first shows of the Royal South London Floricultural Society.

In conclusion, to grow cucumbers fine and handsome they must be grown upon trellises; the plants will bear better, continue to produce for a much greater length of time, and they will also in this way grow more robust and healthy, a circumstance no doubt due to the great circulation of air which plays constantly around them.—*Journal London Hort. Society.*

QUINCE MARMALADE.—Let the fruit hang on the tree till one falls to the ground; then gather the crop. Pare, quarter, and core them; but scrupulously save every pip. The pips of quinces abound in mucilage, as may be perceived by taking one into the mouth and chewing it, when it will make the lips stick together as a piece of gum arabic would. Put the quinces with the pips into a stew-pan, with a sufficiency of lump sugar, and just enough water

at the bottom to keep them from burning. As the sugar dissolves and the liquor boils, continue stirring the whole mass. When the fruit becomes tender, break and mash it well with a spoon. In about an hour from the commencement of the operation, it will be cooked enough. It may then be turned out into preserve jars; a portion should be put into shapes, to be used at dessert in the same way as Bullace and Damson cheese. The next morning it ought to be perfectly stiff and gelatinous, from the strong mucilage of the pips having been thoroughly incorporated with the whole mass. The quantity of sugar used may be rather less than is necessary for other preserves. If tied down the usual way it will keep good for a long time. The medicinal qualities of this preparation are applicable to those cases in which mucilage is administered internally; and a pot of quince marmalade would be as agreeable a prescription to a dysuric patient, as a dish of roasted onions or a dose of linseed jelly.

Everybody whose garden or orchard is above the very smallest size ought to have at least one quince tree, particularly if it contain any low moist corner. To such a situation they may be removed at a considerable size; their cost at the nursery is trifling, and many a useless shrub, such as the Snowberry, or the Privet, might advantageously be uprooted to make way for them. Few low-growing standards are more ornamental. In a small space they exhibit all the members and proportions of a full sized tree; something like the Chinese Koo-shoo, or artificially dwarfed Oaks, Hornbeams, &c., that are grown in pots; there is the old looking trunk, the pendant and grotesquely contorted branches; there is the scattered foliage, like the natural day, dark one-half and light the other; in the spring there are large, delicate blossoms, and in the autumn drooping fruit.—*Gardeners' Chronicle*.

SEAKALE.—The Seakale-bed is to be planted in March, in straight rows five feet asunder; the plants in each row to be 18 inches apart. It is, of course, understood that the ground be thoroughly trenched and manured as usual. Something, but not much, is gained by obtaining year-old plants from the nursery, instead of sowing the seed in the rows, there to remain. By the first method, you have a larger cutting the ensuing spring; but you may cut from your seedling plants, which will have suffered no check by removal, and will grow with corresponding vigour.

Some time in December, not too soon, when the foot-stalks of the leaves have fairly separated themselves from the crown of the plants, heap over each about a quarter of a peck of sea-sand or wood ashes; if not to be had, any light unmanured soil will do. Then earth up the plants from a trench dug along the space between the rows, exactly as if you were earthing up celery, only that no leaves appear above the top of the mound. The earth should be heaped up till it is about two feet above the crowns of the plants, and then flatted down with the back of the spade, and the whole made very smooth and neat. The long trench between the rows of Seakale will act as a drain during the dead time of winter. In the spring, when the shoots begin to push, large cracks will be seen in the bank of

mould, and a trial may be made with a trowel, as soon as they are supposed to be sufficiently advanced for cutting.

The Seakale thus obtained is larger, more succulent, and more delicately flavored than that blanched under pots. In one case the growing shoot is constantly in contact with the damp mould, and absorbs moisture instead of parting with it. In the other, the Kale is subject to all the influences of air, though excluded from those of light, from which, however, it is only protected by a porous, imperfectly closed vessel. All the expense of pots and manure for forcing is saved; and the only objection to the adoption of this plan in all cases, is, that the crop comes in too much at once. But by having rows of Kale in different exposures, a difference of at least ten days may be made; and a few plants at the foot of a south wall, earthed up from the border, and merely so covered with mould that it slopes against the wall, will afford a very early gathering.

No second cutting should be attempted; not so much for fear of weakening the plants, as because the weak shoots thus obtained are comparatively worthless. The earth should be levelled into the trenches, exposing the crowns of the plants, and by introducing some rank manure there will be plenty of time for a crop of cauliflowers (in single line) before the increasing leaves of the Seakale require their removal.

This valuable esculent, so easy of cultivation, requiring no peculiar advantages of soil, climate, or situation, well deserves to be more extensively propagated. Those who form their judgment from the estimation in which it is held in and about London, are little aware how far it is from being general in the remoter districts of Great Britain. It is admirably adapted by its hardiness to such countries as Canada, Norway and Sweden, Northern Russia, &c., where if earthed up before the frost came, it would lie dormant under the thick snow, and be ready on the return of spring to put forth its delicious shoots. It is also fitted for those northern insular situations where the temperature never rises above a moderate degree, and where the rains of summer and the constant damps of winter would rot our more tender vegetables. The introduction of a bed of Seakale into a colony or island where it had hitherto been unknown, would be an additional proof of the usefulness of the *Gardeners' Chronicle*.

To Cook Seakale.—After being well washed, tie it in small bundles for the convenience of taking up, and drop it into a saucepan of boiling water, in which a little salt, according to taste, has been dissolved. Keep it boiling. In about 25 minutes it will be done enough, which may be known by trying it with a fork. Sir Humphrey Davy tells us that the reason why vegetables and fish should be plunged in boiling salt and water is, that this solution boils at a higher temperature than plain water, and that the sudden scalding fixes the albumen, mucilage, and other nutritive parts of the viand, instead of their being macerated and sodden, and so partly lost in luke-warm water. The most economical mode of serving Seakale is to lay it in a vegetable dish with a strainer at the bottom, and to send up in a small tureen any sauce that may be

desired at the same time. The usual way is to lay it on sippets of toasted bread, and pour over it some white sauce, or melted butter made with milk instead of water. But if the toast is not intended to be eaten, but only to serve as a draining cushion to the vegetable, and then cast out to pigs, or, in a town, probably to the kennel or dust-hole, such a wasteful proceeding is, to say the least, culpable, while so many of our fellow-creatures are perishing for want of a like morsel.—*Gardeners' Chronicle*.

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HINT TO ORNAMENTAL PLANTERS.—The question has often occurred to me, as it probably has to many others, why do artificial plantations never have the appearance of natural woods? The principal cause appears to me obvious and simple, and one easily removed. It is this: that planters invariably make the great mistake of filling up their plantations to the very extremities with trees as thick as they can stand together. The consequence is, that though they may take a pleasing outline for their boundary fence, yet that outline remains stiff

and hard, consisting of trees of nearly uniform height and age; and when viewed at a distance, the plantation looks as if its edges had been clipped by the gardener's shears, a defect which the growth of a hundred years often fails to obliterate. Now let the observer turn his eyes on any natural wood; there everything is quite different, he will find no precise definite outline; on the contrary, the skirts of such a wood almost always consist of widely scattered trees of various growth and age, forming groups with many vacancies and intervals bare of trees running up between them. This it is that gives that pleasing variety which offers so strong a contrast to the productions of the landscape gardener. If, then, the above observations are well founded, the planter may easily avoid the defect of which I complain, which often makes a plantation rather an eyesore than an ornament. Let him only imitate nature, by fringing his plantations with widely scattered trees, interspersed among numerous vacancies and intervals, as above described, and I feel confident of the good result.—*Gard. Chron.*

DOMESTIC NOTICES.

THE GENESEE FARMER.—Among the first on our exchange list is this truly valuable agricultural journal, published at Rochester, N. Y., and conducted by Dr. LEE, in its agricultural, and Mr. BARRY in its horticultural departments.

Dr. LEE is widely and favorably known by his earnest devotion to the cause of *agricultural chemistry*. Both by lectures and editorially, has he labored for a long time most zealously to awaken farmers to the importance of the science of chemistry, and to render that science plain and comprehensible to all persons engaged in agricultural pursuits.

It is not, perhaps, too much to say that the Genesee Farmer has done more for the benefit of agriculture, in this particular department, than any other agricultural journal in the Union. The horticultural department is managed, in the main, with excellent practical knowledge, as well as spirit and taste. We are heartily glad, therefore, to learn that its influence is gradually extending itself in every direction.

In the leader of the April number, we perceive Dr. LEE has entirely misunderstood the editor of this journal, and our personal views in writing the articles on the *Philosophy of Manuring Orchards*, which has attracted some little attention in various parts of the Union. Certainly, nothing was farther from our wishes than to appear to claim any originality in bringing forward the now well known chemical theory regarding special manures. It is not a department to which we have particularly devoted ourselves, as Dr. LEE and others have done, though we have always felt bound not to let leaders, like himself, get wholly beyond our more limited vision. On the contrary, we not only gave especial credit to Dr. EMMONS, of Albany, for his

most valuable researches into this subject, but published, in a note, his exact analyses.

We did this in the spirit of "honor to whom honor is due," and always wish to follow this maxim. Strictly, however, we were not bound to do so; for LIEBIG and other writers had already made the theory of special manures widely known, and there was no need of any reference to authorities. The following remark, from one of the most distinguished men of science in England, is to the point on this subject:—

"Discoveries, when once communicated to the world, become public property; they are thrown into the common stock for mutual benefit; and it is only in the case of debatable opinions, or of any recent or unconfirmed observations, that it really interests the world that authorities should be quoted at all."

Still, we did consider Dr. EMMONS as highly deserving of especial thanks of horticulturists, for directing his attention to the *analysis of fruit trees*; and it was with the design of drawing the attention of the horticultural public generally to this subject, that we took it up precisely at the season of the year when it was most applicable, and treated it as we did. Though we had no hope of throwing as much sunshine on the garden and orchard as Dr. LEE has done on the farm, we hoped to clear away a little of the ground-fog, and trust our contemporary will, on consideration, take what he calls our "waking up" with his wonted amiability.

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POMOLOGICAL RULES.—To the list of Horticultural Societies which have adopted the Rules of Pomology in our last number, we are now able to add the RHODE ISLAND HORTICULTURAL SOCIETY, and the DETROIT (Mich.) HORTICULTURAL SOCIETY.

The adoption of these rules so generally throughout the country cannot but be attended with the most beneficial results to pomological science, by giving it more definiteness in the future, and to point growers and nurserymen, by guarding in some measure against the introduction, every year, of a long list of new names and new varieties, totally unworthy of cultivation.

We observe that one or two of the agricultural journals have mistaken the spirit and intention which actuated those who originated these rules. It is a great error to suppose that they intended to force the horticultural community to adopt any set of rules, or to govern or oblige them to act within certain limits. Far from it. These rules originated in certain crying defects in the system of naming and adopting new varieties hitherto that prevailed in our oldest societies, by which any person, even if totally and confessedly ignorant of existing varieties of fruit, and therefore necessarily unable to decide whether a seedling of his own might be better than any sort hitherto known, or inferior to 20 other second rate sorts—whether such a person should be able to give his seedling to the public with a high sounding name, or whether it should first be submitted to the fruit committee of some Horticultural Society, or some competent pomologist to decide upon its merits. This is so manifestly for the public protection and the public good, that there cannot be a dissenting opinion in the mind of any reasoning being.

A few of the leading societies having determined to adopt these rules, we brought the matter before the public in our columns, and requested all the Societies in the country to adopt them, and thus make what was originally intended as a local matter, one of general benefit. Neither the Massachusetts, Pennsylvania, or Cincinnati Society had the slightest wish or desire, as the journals we have alluded to have supposed, to force a code of pomological laws upon the country. They furnished us their rules for publication, leaving other societies, and the horticultural public generally, to adopt them or not at their own pleasure.*

We are heartily glad that almost all the leading horticultural societies have now adopted these rules, for we look upon it as a new era in pomology. We are tolerably conversant with pomology abroad, and so far as we can learn, it is the first set of pomological rules yet adopted, and published, in any country. That there is great need of some rules of this kind on the continent of Europe, no one, conversant with the confusion of nomenclature in the pomological works of France and Germany, no one, conversant with the practice of some nurserymen of those countries, of sending out a single

fruit under several different names, thus injuring and deceiving purchasers, can doubt for a moment.

We hope to see pomology, under the wholesome influence of the American Rules, take the shape of a more definite and precise science. He who raises a new fruit of merit, will then the more easily place it before the public and reap his reward; while others will not find it so easy to palm off upon the community second or third rate varieties as sorts of superlative excellence.

.....

APPLE TREE BORER—TO PREVENT ITS ATTACKS. This insect (*Saperda bivittata*,) is fast becoming the most serious pest of the orchardist, in some parts of the middle and eastern states. Perforating the trunk in every direction, it soon destroys its whole structure; and while he, who is unacquainted with its habits, only perceives in the bark a few holes, as if made with a common awl, the insect has, perhaps, made a "powder-post" of the whole tree.

It is a very difficult insect to combat; but May is the month to make war upon it, since at the close of the month, or early in June, it makes its exit from the tree, and sets about depositing eggs in a score of new branches or trunks, to perforate them in like manner. Hence, it is evident, that by destroying every borer, if it were possible, before he emerges from the tree, we shall destroy the whole brood.

There are two points to be aimed at: one, to destroy all that can be reached before they emerge from the tree; the other, to prevent their laying their eggs in the bark of certain other trees.

We are inclined to believe that one of the best modes of doing this, is to be provided with a mixture, composed of soft-soap, tobacco water, and flower of sulphur, made by adding a pint of the sulphur and as much strong tobacco water to a gallon of soft-soap as will bring the whole to the consistency of paint. With a small syringe, (that may be had for a shilling at an apothecary's,) the aperture of which will about match the hole of the borer, inject this liquid into every hole that can be found till the hole is filled.

Then, with a stout brush, wash the trunk (removing the soil a little at its base first,) thoroughly with the mixture. All the larger branches should also be washed thoroughly, so as to leave no part of the bark uncovered.

We ascertained last year, by experiment, that the borer, in its winged state, when seeking for trees in the bark of which to lay its eggs, immediately left all that had been washed in this way—even though the coating had been on for several weeks.

This insect usually chooses the collar of the tree, near the surface of the ground, in which to lay its eggs, though, when abundant, it also takes other parts of the trunk, and especially the forks of the branches near the trunk. By coating all these parts, we shall perhaps be able to prevent its destroying the tree; and while, by the injection of the liquid into its holes, (if this proves effectual,) or by the old mode of thrusting wires into the holes, the parent stock must be as much diminished as possible before the insects are ready to come out in a perfect state.

* We owe the Massachusetts Society an apology for publishing the rules *incorrectly* the first time they appeared in our columns—having, in the haste of sending them to press, taken an uncorrected proof of the original draft, instead of the corrected copy as actually passed, and as published last month. The rule restricting the publication of new varieties to one or two journals "of the largest circulation," originally intended only to simplify the search for the records of original descriptions, was actually passed without the latter clause as likely to be considered exclusive by journals not coming within the limit, though perhaps the benefit to the community would have been clear enough.

Not only the apple tree, but also the mountain ash, the quince, and the hawthorn, suffer greatly by this insect. If no pains are taken to diminish its numbers, it will become a serious obstacle to the cultivation of these trees.

.....
BLACK-KNOTS IN PLUM TREES.—The only successful way of getting rid of the "black-knots" that we have ever known, is that of cutting off every branch or part of a branch covered by this excrescence and burning it; and this should be done before the middle of May. But it occasionally happens that a wart or spot will burst out on the very body of the tree, or upon some large and important branch, to lop off which is to destroy the whole tree, or its head. To amputate the wart itself is not sufficient; for its poison is diffused through the sap in the surrounding parts, and, like a cancer, is sure to break out again very soon.

Last spring we made an experiment upon six trees in the garden of a neighbor, which were somewhat infested with knots, as follows: All the knots at or near the ends of the limbs were entirely destroyed by taking off the branches a foot or more below the wart itself. The few that remained were upon the trunk, or on the main branches near the trunk. These were all carefully and deeply cut out down to the sound healthy wood. Three of the trees then had the wounds washed directly with a solution of copperas water, (made by dissolving 2 drachms of copperas in a quart of water.) The wounds on the other three trees were left untouched.

At the present time those wounds to which the copperas water was applied look quite healthy, and are healing over rapidly; no indication of a return of the knots being visible around or near them.

The wounds on the remaining three trees left unwashed are healing more slowly, and in more than half the cases, small warts have again made their appearance on the edges of the wound,—in two instances completely covering it in one season.

The discoveries of M. GRIS, relative to the effect of copperas on sulphate of iron, as a specific upon diseased conditions of the sap and leaves, (published in our last volume,) induced us to make this experiment. Though it is too early to pronounce an opinion, the indications of success are encouraging, and we suggest a renewal of the experiment to others.

.....
PERSIAN YELLOW ROSE—This is truly a charming addition to our collection of roses, large as the latter is. Indeed we should say that the smallest collection is scarcely complete without it. It is far superior to the *Harrison* in the form and shape of the flower, much more double, and a fine, clear, distinct, yellow in its color. It also blooms very freely. It was introduced from Persia to England, by Sir Henry Willock, and presented to the Horticultural Society of London in 1838. It has now found its way to this country, and is for sale by most of the rose growers.

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DETROIT HORTICULTURAL SOCIETY.—We have received from T. H. HINCHMAN, Esq., secretary of this society, a report of its proceedings. The society was organized March 6, 1846. Last year monthly meetings were held from May to October;

and these exhibitions have already awakened a lively interest in the neighborhood of Detroit, and the influence of the society will no doubt soon be seen throughout that new state. At the May exhibition, one hundred and fifty varieties of tulips were shown. Plums, cherries, pears, etc., and also the *Isabella* and *Catawba* grapes thrive well in that part of Michigan; and the products of the kitchen garden, (including melons,) are unusually excellent, large and abundant.

"At the last meeting of the society," says the secretary, "the Rules of American Pomology, as published in the *Horticulturist*, were adopted. The society, in the confused state of nomenclature, had already felt the want of such rules."

.....
THE NEW DAHLIAS.—The English Dahlia growers are not content with "perfection"—or what appeared perfection a few years ago—in this gayety of summer and autumn flowers. Acres and acres of ground are devoted to the production of extraordinary new seedlings, and the arts of hybridizing and careful selection of seeds are brought into play every year, to produce some still greater novelty of form and colour.

Among the prize sorts of last season, we notice "fancy varieties," the flowers of which are *yellow*, tipped with *white*, *dark maroon* tipped with *light pink*, *primrose* tipped with *bright red*, *buff* tipped with *white*, etc. The most highly esteemed of the new plum-colored sorts are perhaps *Nell Granger*, *Queen of England*, *War Eagle*, *Shylcock*, and the much talked of, new, gold-coloured English seedling—*Toison d'or* or *Golden Fleece*.

The greatest Dahlia growers in America are Messrs. THORBURN & Co., of New-York. The soil of their garden at Astoria is particularly well adapted to this plant, and the effect of their enormous parterre, last autumn, when we saw it there in full bloom, was truly magnificent. From the lead which they have taken in the culture of the Dahlia (we have heard that their sales in the months of May & June, 1846, were over 6000 plants), they are enabled to search the choicest collections of England and the continent, every year, for all the finest prize seedlings, without regard to cost. These new sorts, which are often procured at the cost of several pounds sterling per root, are imported in winter, propagated largely in early spring, and offered for sale in May of the same season they are imported, at greatly reduced prices.

The introduction of the new "fancy Dahlias," exquisitely variegated, striped, and tipped with various bright colors as they are, forms a new era in the culture of this popular Mexican flower, and those who, three or four years ago, supposed they had exhausted all its novelty and interest, may now begin afresh, with the new varieties, with more zest and satisfaction than before.

.....
GAS LIQUOR.—Gas liquor, as the ammoniacal water of the gas works is called, is a powerful manure. Mixed with water, in the proportion of three parts gas liquor to twenty parts water, it has been used for watering grass in the garden of the Horticultural Society of London, and one rod so

watered has produced eighty pounds of grass, while that left to itself produced only twenty pounds.

A friend in New-York informs us that he watered a pear tree two years ago with diluted gas liquor, (about six gallons gas liquor to 20 gallons water,) so as to thoroughly soak the soil about the roots two or three times in the course of the summer. The tree was an "outcast" Doyenné, and had borne none but *cracked* pears for years. Last season it bore a crop of fine smooth fruit. Those who repeat this must be careful not to use the gas liquor too strong.

HYBRIDIZING THE GRAPE.—I am very desirous of crossing our native grape with the best foreign sorts, but I do not very well see how it can be done, as the two do not come into bloom at the same time. Will it do to keep the pollen of one till the other is in a fit state, or will it injure pollen to carry it some distance? *J. W., Baltimore, Ap. 1848.*

[Pollen may be kept for months without the least injury, if sealed up in a dry phial, or wrapped up in sheet lead. If our friend wishes to fertilize the native grapes in the open ground, before the foreign varieties out of doors are in bloom, he can do it by procuring pollen from some vineyard of foreign grapes in his neighborhood, the blossoms of which are fully expanded. It will not injure pollen in the least, to carry it a thousand miles.—Ed.]

TREES FOR THE SEA COAST.—Pray give me, if you can, the names of two or three forest trees that will grow quite on the sea coast, where most of the commonly planted trees fail? It must of course be something that will stand sea wind and salt spray. Yours, *A Cape May Reader.*

[The two hardiest trees for such positions are the Balm-of-Gilead poplar and the common Buttonwood or Sycamore. The oriental plane tree, to be had in the nurseries, is very slightly different from our common Buttonwood, and is not attacked by the Sycamore disease. The best shrub for the sea-side is the Sea Buckthorn, [*Hippophae Emarginata*].—Ed.]

BARK-BOUND TREES.—DEAR SIR—Can you or any of your correspondents inform me how to treat trees that have become bark-bound—i. e. the bark on the trunk close and rigid, refusing to swell kindly and in proportion to the growth of the upper part of the tree? I have a number of trees in this condition, by which the trunks become mossy, and the vigor of the tree impaired. Yours, &c., *B. C., Pittsburgh, Pa., Ap. 2, 1848.*

[Scrape the bark with a dull knife, and then scrub and wash it thoroughly with strong soap suds. In most cases a repetition of this washing twice or thrice in the season, will remedy the difficulty. If, however, the case is a stubborn one, bind straw round the trunk, after washing it, and let it remain the whole season.—Ed.]

AIMEE VIBERT ROSE.—I have seen no notice of this very fine variety in your pages. I prefer it to every other Noisette. Its flowers are *pure white* (the buds tinged with pink before expanding), and are produced in continual succession all the season, not few and far between like some other Noisettes.

I have a whole bed of it, and there is not a day during the summer or fall that I cannot cut half a dozen bouquets of this variety alone. It is also quite hardy, and the foliage is of a fine deep green, the plant neat and compact in its growth. Pray recommend it. *J. B. S., Phila., Ap. 10, 1848.*

[This we do most willingly, as it is not at all overpraised by our correspondent.—Ed.]

LIQUID SHELLAC FOR WOUNDS IN TREES.—This is at once the neatest and most perfect of all applications to the wounds of fruit trees, that we have ever used, and we are glad to find it coming into popular use. We first made it generally known in our work on fruits, p. 37, and we have not heard of its being tried in a single instance when it did not give entire satisfaction. The following is an extract from a letter received lately, bearing testimony in its favor:—

—“After trying half a dozen compositions or plaisters, highly commended in books or journals, for keeping the air from wounds in fruit trees, I perused your work and saw the recipe for making *liquid gum shellac* for this purpose. I immediately made a quart bottle full, by dissolving a shilling's worth of gum shellac in a quart of alcohol, and as soon as it was ready for use, I applied it largely in my orchard pruning. It is really a most complete thing for the purpose, as it entirely shuts out the air, and preserves the wood in a healthy, sound state, so that the bark commences healing over it at once. When you are trimming an orchard, and it is requisite to take off occasionally a pretty stout branch, something to cover the wound is very important—because if left bare a black, decayed spot soon begins, which is the first step towards the rotting and decay of the whole trunk. The superiority of the liquid shellac consists in the thinness of the layer put on, the tenacity with which it adheres in all weathers, and the neatness of its appearance. Then, too, it is always ready when wanted, and if, by gradual evaporation, it should need a little thinning in the bottle, a little alcohol is added. In order to have it always ready, I got a tolerably wide mouthed bottle, and, boring a hole through the cork, passed the handle of a small brush through the cork at such a point that, when the cork is pressed in, the brush is near the bottom of the bottle. The cork and handle are then all of one piece, as it were, and while the liquid is prevented from drying up, the brush is always ready and in good order.

I now use the liquid shellac even for the small wounds made upon pear and peach trees, shrubs, etc., by cutting off branches of the size of your thumb. I find they heal over much more rapidly and smoothly than when left bare.” Yours, truly, *J. S., Phila., April, 1848.*

FRUIT GROWING AT THE SOUTH.—DEAR SIR:—I see in almost every number, more or less from your gifted correspondents on the subject of fruit-culture at the North and West, and also many tests of fruits suitable for those climates; but nobody says a word about what can be done in the “Sunny South,” in the way of raising the different varieties of fine fruits. This is to be regretted the more, as we

"Southern folks," who have been used to cultivating little else but corn and cotton, know but very little indeed, in regard to the proper management of fruit trees, except perhaps the peach. And even the peach tree is left generally to take its own course, and to live or die, whichever is most convenient.

I have long wished to see something from yourself or correspondents, on the foregoing subject, from southern horticulturists of experience.

Many in this section, feel anxious to raise the fine kinds of plums, cherries, apricots, and pears, but they fear that the climate will not answer. Plums, apricots and cherries seem disposed to shed or drop all their blossoms just as the young fruit is forming, without the attack of any insect whatever. My apricot trees have just finished dropping their very last blossoms, to my very great disappointment. Now cannot you, or some of your experienced contributors, plainly point out the cause of this failure in the incipency of the above named fruits, and tell how to apply a sure remedy? Whoever does so, certainly will be long remembered by us, as a pomological benefactor of the South.

I reside in latitude 30,41—my soil is a sandy, very friable loam, with a subsoil of sand and and clay; the soil, unassisted by manure, is poor, but produces well with a moderate application of manure. Peaches do very well indeed, and apples pretty well, and I have no doubt but pears will do well, and why plums, apricots, and cherries will not do well, is something that I feel particularly anxious to know. Your friend, *Robert Harwell. Mobile, March 15, 1848.*

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ABERDEEN BEEHIVE STRAWBERRY.—In a late number of the Horticultural Magazine, (English,)

Mr. MATHEWSON of Aberdeen, Scotland, advertises a new strawberry, which he calls the "*Aberdeen Beehive*." Of its merits we know nothing; but if an opinion may be formed of what it is, or is likely to be, from the testimony of an experienced cultivator, no strawberry at present grown in Europe or America can equal it.

In Mons. VAN HOUTTE's "*Flores des Serres et des Jardins de l'Europe*," for October, 1847, it is thus spoken of:—"It far surpasses every other known variety; being worth as much as 20 of them together. Each plant throws out from 50 to 120 clusters of fruit, which resemble a beehive, and so coming to maturity that you may gather 15 to 30 ripe berries at any one time. A single plant has borne, in the same season, 334 berries. For forcing, it is admirably adapted; and a dozen plants thus cultivated have yielded together 5600 strawberries. The extraordinary quality and beautiful appearance of the fruit, cannot be appreciated except by those who have seen and tasted them. Each berry is round, and measures $3\frac{1}{2}$ inches in circumference; they are of a brilliant scarlet, which relieves the beautiful green of the leaves; the flavor high; the perfume delicious. As the colour of the flesh is the same internally as externally, they will make handsome preserves."

If this description be not exaggerated, here is a strawberry worth growing. But one nursery firm has imported it, that we know of,—Messrs. Winter & Co., of this village. *Wm. W. Valk. Flushing, L. I., January 7, 1848.*

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ERRATUM.—In Mr. MANNING's article on peaches, p. 401, for *Green Rareripe* read *Yellow Rareripe*.

MASSACHUSETTS HORTICULTURAL SOCIETY.

A business meeting was held March 4th, 1848, president Wilder, in the chair.

Francis Dana, Roxbury, was elected a subscription member of the society.

At a meeting of the society, held April 1st, the following gentlemen were proposed for membership.

Life—George W. Warren, Boston, by the president.

Subscription—Wm. S. Wilson, by Joseph Breck.

Voted, That the thanks of the society be presented to the New-York Agricultural Society for copies of their transactions.

A package of Onion seed was received from Charles W. Dabney, Esq., of Fayer, and it was

Voted, That the thanks of the society be presented to CHAS. W. DABNEY, Esq., of Fayer, an honorary member of the society, for his donation of a package of onion seed, and that the seed be placed in the hands of the committee on vegetables for distribution.

The Committee on Finance submitted the following report: The Committee on Finance, in accordance with a vote of the society, authorising them to invest not exceeding two thousand dollars, as a fund toward meeting the mortgage on Horticultural Hall, beg leave to report,

That they have purchased 15 shares of old stock in the Old Colony Railroad, at 93 1-4 per cent of, say \$1395,75, that the

same has been paid for by the treasurer, and the certificate of said stock has been received by him.

The committee, in view of the present state of the treasury, and the right the society will have to take their pro rata share of the new stock in the Worcester railroad, if created, and for which a bill is now pending in the Legislature, would advise no further investment at present.

The same committee to whom was referred the letting of the society's store and cellar under their hall, have attended to that duty and respectfully report: That they have concluded a contract with Mr. Bowditch, the present occupant, to renew and continue his present lease for the space of two years, the price and terms in all respects to be the same, and recommend that a vote be passed, authorising the president to confirm and carry out said agreement.

All which is respectfully submitted.

JOSIAH STICKNEY,
JOSEPH BALCH,

Voted, That the report of the committee on finance be accepted, and that the president be authorised to make a renewal of the lease.

Voted, That the president and recording secretary be a committee to provide tickets for members and the public for the coming season, and that the terms of admission be the same as last year. *E. C. R. Walker, Rec. Sec.*

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated meeting of this society was held on Tuesday evening, March 21, 1847, the president in the chair. The display was very fine and interesting, consisting of a number of tables of choice plants in flower, and vegetables unusual at this season. The president's gardener exhibited beautiful Rhododendrons, Acacia, Azaleas, Camellias, Oncidium and other plants, and handsome bouquets; also, of forced vegetables, blanched sea-kale, blanched Rhubarb, Asparagus, heads of lettuce, new potatoes, kidney beans in pod, and remarkably large black spined and Turkey cucumbers. Mr. Buist presented a fine collection of plants, among which were a handsome seedling Rhododendron of merit, *Ericas*, *Camellias*, *Brugmansia*, *Justicia*, with many other plants, altogether a creditable display. Andrew Dryburgh exhibited a table of choice and well grown *Camellias*, *Azaleas*, *Roses*, etc. Benjamin Gulliss, a table of *Azaleas*, *Amaryllis*, *Mahonia*, *Roses*, etc. Peter Raabe, a small but select collection. John Sherwood, a good seedling *Camellia*. Robert Kilvington, an interesting collection of indigenous plants, in flower, *Aquilegia*, *Obolaria*, *Saxifraga*, *Geranium*, *Mitella*, *Tiarella*, *Hydrastis*, *Houstonia*, *Cardamine*, with a number of ferns. John J. Smith, a remarkably good specimen of the Mistletoe, growing in a small branch of a white oak. James Ritchie, cut specimens of *Camellias* of select varieties, and two large collections of vegetables by Anthony Felten, and lettuce and radishes by Wm. Johns.

Premiums were awarded as follow: By the committee on plants and flowers, for the best specimen of a Rhododendron in a pot, and for the second best specimen, to B. Daniels, gardener to Caleb Cope; for the best seedling Rhododendron, to Robert Buist; for the best three Azaleas, for the best grown and finest flowered hothouse plants, and for the best grown and finest flowered green house plants, to B. Daniels; for the best and most interesting collection of plants in pots, to Andrew Dryburgh; for the second best, ditto, to Benjamin Gulliss; for the third best, ditto, to B. Daniels; for the best display of indigenous plants, to Robert Kilvington; for the best bouquet and best basket of cut flowers, to B. Daniels; for the second best bouquet, to Robert Kilvington; for the second best basket of cut flowers, to Andrew Dryburgh. And special premiums for Pansies, of two dollars, to Chalmers and McDonald, Camden, N. J., and of two dollars, to Peter Raabe, for a handsome collection of plants, and another of one dollar, to James Ritchie, for a collection of cut *Camellias*.

By the committee on vegetables, for the best and most interesting display by market gardeners, and for the second best, ditto, to Anthony Felten; for the best and most interesting display by amateur gardeners to B. Daniels, gardener to Caleb Cope; for the second best, ditto, to Wm. Johns. And a special premium of two dollars, for a very fine display of black spined and Turkey cucumbers, to B. Daniels.

The corresponding secretary reported that the president of the Massachusetts Horticultural Society had presented a copy of the first number of the Transactions of that society.

On motion, ordered that the thanks of the society be tendered for so acceptable a gift.

Members elected.—Robert Dink, John Cassin, Samuel C. Witmer and Samuel W. Budd.

On motion, adjourned. *Tho. P. James, Recording Secretary.*

Monthly meeting, Tuesday, April 18, 1848, the president in the chair. There was a general attendance of members on the occasion, who appeared to be gratified with the exhibition. Among the many interesting objects presented might

be noticed a table of choice varieties of everblooming *Roses*, and a very handsome plant—the *Spiraea Reevesiana*, a recently introduced species, and for the first time shown before the society, will prove an acquisition. Another collection of select and mostly new kinds of *Rose** and *Pansies*, were shown by Chalmers and McDonald, Camden, N. J. A table of remarkably fine *Pelargonias*, by Robert Buist. James Bisset, gardener to James Dundas, exhibited fine specimens of hothouse plants, *Pelargonias* and *Polyanthi*. B. Daniels, gardener to the president, green house plants, *Pelargonias* and *Hyacinths*. Benjamin Gulliss exhibited a collection of plants in pots, of fine growth. Robert Kilvington, as usual, had a display of interesting "natives" in pots, and a handsome bouquet of the same. Dr. A. W. Mitchell, presented a beautiful cluster of the flowers of *Catleya labiata*.

Of fruits, the president's gardener exhibited a dish of grapes of the Tokay and Sweet Water Varieties, also some strawberries and Raspberries. James Bisset, bunches of the black Hamburg grape.

Of vegetables, B. Daniels presented a rich display, all new and cut during the day, consisting of cucumbers, asparagus, potatoes, peas, cauliflowers, rhubarb, squashes, kidney beans, tomatoes, sea-kale, lettuce, radishes, spinach and capsicums.

Anthony Felten, two very full tables of fine specimens.

Premiums were awarded as follow:

For the best ten *pelargonias*, in pots, to Robert Buist; for the second best, ditto, to James Bisset, gardener to James Dundas; for the third best, ditto, to B. Daniels, gardener to Caleb Cope; for the best ten ever-blooming *Roses*, to Chalmers & McDonald, Camden, N. J.; for the second best, ditto, to John Sherwood; for the third best, ditto, to Chalmers & McDonald; for the best six *Hyacinths*, to B. Daniels; for the best six *Pansies*, to Chalmers and McDonald; for the second best *Pansies*, to Matthew Mills; for the best six *Polyanthus*, to James Bisset; for the best hot house plants, to Jas. Bisset; for the best green house plants, to B. Daniels; for the most interesting collection of plants in pots, to Benjamin Gulliss; for the best display of indigenous plants in pots, to Robert Kilvington; for the best bouquet, to B. Daniels; for the second best, to Miss Gratz's gardener; for the best basket of flowers, to B. Daniels; for the best indigenous bouquet, to Robert Kilvington.

The committee on fruit, awarded special premiums of three dollars each, to Ben. Daniels, gardener to C. Cope, for white Tokay and Sweet Water Grapes, and to James Bisset, gardener to Jas. Dundas, for black Hamburg grapes.

The committee on vegetables awarded premiums—for the best cucumbers, two in number, to B. Daniels; for the second best, ditto, to Anthony Felten; for the best cauliflowers, three heads, to Anthony Felten; for the best sea-kale, six plants, to B. Daniels; for the best asparagus, to Isaac B. Baxter; for the second best asparagus, to B. Daniels; for the best rhubarb, to A. Felten; for the most interesting display of vegetables, by market gardeners, to A. Felten; for the second best, ditto, to the same; for the best display by amateur gardeners, to B. Daniels.

The secretary reported a communication from Mr. C. M. Hovey, Boston, accompanying which were scions of desirable pears and apples, a present to members of the society, which he had delivered to the committee for distribution, and were accordingly disseminated. On motion, ordered that the thanks of the society be tendered to Mr. Hovey for the present.

Members elected.—Geo. Wainwright, Joseph Mevius and Jacob Mevius.

On motion, adjourned. *Tho. P. James, Rec. Sec.*

NEW-YORK STATE AGRICULTURAL SOCIETY.

HORTICULTURAL DEPARTMENT.

We copy the List of Premiums to be awarded on Fruits, Flowers, &c., at this Society's Annual Exhibition, to be held at Buffalo, on the 12th, 13th and 14th days of September next.

APPLES.

For the greatest and best variety of good table apples, 3 of each variety, named and labelled, grown by exhibitor, Diploma and \$10. For the 2d best, \$5. For the 3d best, Trans.

For the best 12 varieties of table apples, \$5. For the 2d best, Trans. and \$2.

For the best six winter varieties, \$3. For the 2d best, Trans. and \$2.

For the best fall seedling apple, for all purposes, with description of tree, history of its origin, &c.,—one dozen specimens to be exhibited, \$5. For the 2d best, \$2.

PEARS.

For the greatest number of varieties of good pears, named and labelled, Diploma and \$10. For the 2d best, \$5. For the 3d best, Trans.

For the best collection of first rate autumn pears, named and labelled, Dip. and \$5. For the 2d best, Trans. and \$2.

For the largest and best collection of winter pears, named and labelled, Dip. and \$5. For the 2d best, Trans. and \$2.

For the best collection of newly introduced pears, with a description, &c., Dip. and \$10.

PEACHES.

For the best 12 varieties, labelled, Dip. and \$5. For the 2d best, \$2.

For the best 6 varieties, labelled, \$3. For the 2d best, \$2.

For the best seedling variety, 6 specimens, \$3. For the 2d best, \$2.

PLUMS.

For the best collection of plums, 6 specimens each variety, Dip. and \$5. For the 2d best, \$3.

For the best 6 varieties of good plums, 6 specimens each, \$3. For the 2d best, \$2.

For the best 12 plums, choice variety, \$2. For the 2d best, Trans.

For the best seedling plum, with description, Dip. and \$2. For the 2d best, \$5.

NECTARINES AND APRICOTS.

For the best and greatest number of good varieties, 6 specimens each, labelled, \$3. For the 2d best, \$2.

For the best 12 specimens of any good variety, \$2. For the 2d best, Trans.

QUINCES.

For the best 12 quinces of any variety, \$3. For the 2d best, \$2. For the 3d best, Trans.

GRAPE.

For the best and most extensive collection of good native grapes, grown in open air, \$5. For the 2d best, \$2.

For the best 3 varieties of native or foreign grapes, grown under glass, 3 bunches to be shown, \$5. For the 2d best, \$2.

For the best dish of native grapes, Trans.

WATERMELONS.

For the best 6 specimens of any variety, \$3. For the 2d best, \$2.

MUSKMELONS.

For the best 6 specimens of any variety, \$3. For the 2d best, \$2.

CRANBERRIES.

Best peck of domestic culture, \$3. For the 2d best, \$5. To be accompanied with a full description of the manner of cultivation, nature of soil, &c.

Any premiums may be withheld in the discretion of the committee, if the samples exhibited are not worthy of a premium.

The fruit exhibited for which premiums are awarded, to be at the disposal of the committee.

12 volumes of Downing, common edition, and 12 of Thomas' Fruit Cult., will be awarded by the committee, in their discretion, for choice fruits not enumerated.

SEEDLING APPLES, to be awarded at winter meeting—For the best new seedling variety of winter apples, of decidedly superior quality, and valuable for exportation,—one dozen specimens to be exhibited, together with a history of its origin, description of the growth, character and habits of the tree, and the growing of the fruit—such fruit to be adjudged by the committee as of the first character for orchard purposes, Diploma and \$10. For the 2d best, \$5.

The above new seedling variety to be sent to B. P. Johnson, Secretary, Agricultural Rooms, Albany, before the 15th of January, 1849, for examination.

FLOWERS—PROFESSIONAL LIST.

Greatest variety and quantity of flowers, \$5.

Dahlias.

Greatest variety, \$5. Best 24 dissimilar blooms, \$3.

Roses.

Greatest variety, \$5. Best 24 dissimilar blooms, \$3.

Phloxes.

Best 10 varieties, \$3. Best seedling, \$2.

Verbenas.

Greatest variety and number, \$3. Best 12 varieties, \$2. Best seedling, \$2.

German Asters.

Best Collection, \$2.

Pansies.

Best and greatest variety, \$3. Best 24 varieties, \$2.

AMATEUR LIST.

Greatest variety and quantity of flowers, Silver Medal.

Dahlias.

Greatest variety, Silver Medal. Best twelve dissimilar blooms, \$3.

Roses.

Greatest variety, Silver Medal. Best twelve dissimilar blooms, \$3.

Phloxes.

Best 6 varieties, \$3. Best seedling, \$2.

Verbenas.

Greatest variety, \$3. Best 12 varieties, \$2. Best seedling, \$2.

German Asters.

Best collection, \$3.

Pansies.

Best and greatest variety, \$3. Best 12 varieties, \$2.

GENERAL LIST—Open to all Competitors.

Best collection of green-house plants, owned by one person, Silver Medal.

Best floral design, Silver Medal. Second best, \$3.

Best floral ornament, Silver Medal. Second best, \$3.

Best hand bouquet, "flat," \$3. Second best, \$2. Third best, Wash. Let.

Best hand bouquet, "round," \$3. Second best, \$2. Third best, Wash. Let.

Best and largest basket bouquet with handle, \$3. Second best, \$2.

For the most beautifully arranged basket of flowers, Dip. Best floral exhibition of any Horticultural Society, Gold Medal.

VEGETABLES.

12 best stalks celery, \$3

6 best heads cauliflower, 3

6 best heads broccoli, 3

12 best white table turnips, 3

12 best carrots, 3

12 best table beets, 3

12 best parsnips, 3

12 best onions, 3

3 best heads of cabbage, 3

12 best tomatoes, 3

2 best purple egg plants, 3

12 best sweet potatoes, 3

Best half peck Lima beans, 3

Best half peck Windsor beans, 3

Best bunch double parsley, 3

Three best squashes, 3

Largest pumpkin, 3

12 best ears seed corn, 3

Best half peck table potatoes, 3

Second best, 3

Best seedling potato, 3

For the best and greatest variety of seedling potatoes of approved varieties, 10

Best and greatest variety of vegetables raised by exhibitor, 10

Discretionary premiums will be awarded on choice garden products not above enumerated.

Horticulturist,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

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No. 12.

AT THIS MOMENT, when the old world's monarchical institutions are fast falling to pieces, it is interesting to look at home, at the prosperous and happy condition of our new-world republic.

Abroad, the sovereign springs from a privileged class, and holds his position by the force of the army. His state and government are supported by heavy taxes, wrung from the laboring classes, often entirely without their consent. At home, the people are the sovereign power. The safety of their government lies in their own intelligence; and the taxes paid for the maintenance of public order, or to create public works, fall with no heavy or unequal pressure, but are wisely and justly distributed throughout all classes of society.

In the United States, the *industrial classes* are the true sovereigns. *Idleness* is a condition so unrecognized and unrespected with us, that the few professing it find themselves immediately thrown out of the great machine of active life which constitutes American society. Hence, an idle man is a cypher. Work he must, either with his head, his hands or his capital; work, in some mode or other, or he is a *dethroned sovereign*. The practical and busy spirit of our people repudiates him, and he is of no more absolute

consequence than the poor fugitive king,—denied, and driven out by his subjects.

The CULTIVATORS OF THE SOIL constitute the great industrial class in this country. They may well be called its “bone and sinew;” for at this moment do they not only feed all other classes, but also no insignificant portion of needy Europe, furnish the raw material for manufactures, and raise the great staples which figure so largely in the accounts of the merchant, the ship owner and manufacturer, in every village, town and sea-port in the Union.

The *sovereign people* has a better right to look over its “*rent roll*”—to examine the annual sum total of the products of its industry, than any other sovereign whatever; and it has accordingly employed Mr. BURKE, the excellent commissioner of patents, to collect statistical facts, and publish them in the annual report of his office.

An examination of the condition of this country, as exhibited in Mr. BURKE's report* of its industrial resources, will, we think, afford the best proof ever exhibited of the value of the the American Union, and the extraordinary wealth of our territory. The total value of the *products of the*

* This report is now in press at Washington. Our data have been copied from an abstract already published.

soil, alone, for the past year, he estimates at more than *one thousand five hundred millions* of dollars.*

The value of the grain crops and great agricultural staples of the country, for 1847, amounts to \$815,863,688.

The value of all horticultural products, (gardens, orchards and nurseries,) is estimated at \$459,577,533.

The value of the live stock, wool, and dairy products, amounts to \$246,054,579.

The value of the products of the woods and forests, amounts to \$59,099,628.

It is also estimated that there were produced last year 224,384,502 bushels of *surplus* grains of various kinds, over and above what was amply sufficient for home consumption. This is much more than enough to meet the ordinary demand of all the corn-buying countries of Europe.

Over *one thousand five hundred millions* of dollars, in the products of the soil, for a single year! Does not this fully justify us in holding up the cultivators of the American soil as the great industrial class? But let us compare them a little, by Mr. BURKE's aid, with the other industrial classes.

The annual product of all the *manufactures* in the Union, for 1847, is estimated at \$500,000,000. The profits of trade and commerce at \$23,458,345. The profits of fisheries \$17,069,262; and of banks, money institutions, rents and professions, \$145,000,000. Total, \$809,697,407.

Here we have the facts, or something, at least, like an approximation to the facts, of the results of the yearly industrial labor of the republic. The average amount is the enormous sum of over *two thousand three hundred and eighty-nine millions of dollars*.

Of this, the agricultural class produces *nearly double that of all other classes*, or over one thousand five hundred and seventy-nine

millions; while all other classes, merchants, manufacturers, professional men, etc., produce but a little more than *eight hundred and nine millions*.

There are a few, among the great traders and "merchant princes," who do not sufficiently estimate the dignity or importance of any class but their own. To them we commend a study of Mr. BURKE's statistical tables. There are some few farmers who think their occupation one of narrow compass and resources; we beg them to look over the aggregate annual products of their country, and take shame to themselves.

It is no less our duty to call the attention of our own readers to the great importance of the *horticultural interest* of the country. Why, its products (\$459,000,000,) are more than half as great in value as those strictly agricultural; they are almost as large as the whole manufacturing products of the country; and half as large as the manufacturing and all other interests, excepting the agricultural, combined.

In truth, the profits of the gardens and orchards of the country, are destined to be enormous. Mr. BURKE's estimate appears to us very moderate; and from the unparalleled increase in this interest very recently, and the peculiar adaptation of our soil and climate to the finest fruits and vegetables, the next ten years must exhibit an amount of horticultural products which will almost challenge belief. The markets of this country will not only be supplied with fruit in great abundance and excellence, but thousands of orchards will be cultivated solely for foreign consumption.

The system of railroads and cheap transportation already begins to supply the seaboard cities with some of the fair and beautiful fruits of the fertile west. When the orchards of Massachusetts fail, the orchards

* \$1,579,595,428.

of western New-York will supply the Boston market with apples; and thus, wherever the finest transportable products of the soil are in demand, there they will find their way.

There are, however, many of the finer and more perishable products of the garden and orchard which will not bear a long journey. These, it should be the peculiar business of the cultivator of the older and less fertile soil in the sea-board states to grow. He may not, as an agriculturist, be able to compete with the fertile soils of the west; but he may still do so as a horticulturist, by devoting his attention and his land to orchards and gardens. If it is too difficult and expensive to renovate an old soil that is worn out, or bring up a new one naturally poor, for farm crops, in the teeth of western grain prices, he may well afford to do so for the larger profit derived from orchard and garden culture, where those products are raised for which a market must be found without long transportation. He who will do this most successfully must not waste his time, labor and capital, by working in the dark. He must learn gardening and orcharding as a practical art, and a science. He must collect the lost elements of the soil from the animal and mineral kingdoms, and bring them back again to their starting point. He must seek out the food of plants in towns and villages, where it is wasted and thrown away. He must plant and prune so as to aid and direct nature, that neither time nor space are idly squandered.

Certainly, we have just pride and pleasure in looking upon the great agricultural class of America. Landholders and proprietors of the soil, as they are, governing themselves, and developing the resources of a great nation—how different is their position from that of the farmers of Eng-

land,—hundreds of thousands of men, working, generation after generation, upon lands *leased* by a small privileged body, which alone owns and entails the soil; or even from that of France, where there are millions of proprietors, but proprietors of a soil so subdivided that the majority have half a dozen acres, or perhaps, even a half or fourth of an acre in extent,—often scarcely sufficient to raise a supply of a single crop for a small family.

If we have said anything calculated to inspire self-respect in the agricultural class of this country, it is not with a view to lessen that for any other of its industrial classes. Far from it. Indeed, with the versatility of power and pursuits which characterise our people, no class can be said to be fixed. The farming class is the great nursery of all the professions, and the industrial arts of the country. From its bosom go out the shrewdest lawyers and the most successful merchants of the towns; and back to the country return these classes again, however successful, to be regenerated in the primitive life and occupation of the race.

But the agricultural class perhaps is still wanting in a just appreciation of its importance, its rights and its duties. It has so long listened to sermons, lectures and orations, from those who live in cities and look upon country life as "*something for dull wits*," that it still needs apostles who draw their daily breath in green fields, and are untrammelled by the schools of politics and trade.

The agricultural journals, over the whole country, have done much to raise the dignity of the calling. They have much still to do. The importance of agricultural schools, of a high grade, should be continually insisted upon, until every state legislature in the Union comes forward with libe-

ral endowments; and if pledges ought ever to be demanded of politicians, then farmers should not be slow to require them of their representatives, for legislation favorable to every sound means of increasing the intelligence of this great bulwark of the country's safety and prosperity—the *cultivators of the soil*.

THE HYBRIDIZATION OF THE CAMELLIA JAPONICA AND ITS VARIETIES, WITH THE TREATMENT OF THE OFFSPRING.

[By MARSHAL P. WILDER, Esq., President of the Massachusetts Horticultural Society.]

[WE copy the following highly interesting article from the 2d number of the *Transactions of the Massachusetts Horticultural Society*. ED.]

The following remarks have been prepared in compliance with a request of the Committee of Publication, to furnish an article on the cross-breeding of plants; but more particularly to give some account of the method of practice, and the results of my experiments in the production of hybrid varieties from this beautiful family of Flora.

In treating of this branch of vegetable physiology, I do not expect to promulgate any new theory in explanation of the process by which nature carries on this part of her secret handiwork, or of the laws and principles upon which an All-wise Providence has based the mysterious system of the re-production of the races of beings and plants.

My earliest experiments were pursued more as a matter of recreation than as a scientific study, and although in many instances quite satisfactory, still it is to be regretted, that from causes which could not be controlled, by one busily engaged in other avocations, some of them need farther confirmation. I shall not, therefore, pretend to lay down any fixed rules, from which there can be no departure under any circumstances or treatment, but simply refer to such as are well established in my

own mind, and which, it is believed, will by similar process produce like results. For the success attendant on these efforts, I am largely indebted to the researches of the late Rev. Mr. Herbert, of Spofforth, England, published many years since, in an article on "Crosses and Hybrid Intermixtures." (See his *Amaryllidaceæ*.)

The Reverend gentleman to whom I have alluded, in his investigations into the structure and functions of vegetables, discovered in his experiments with the *Camellia*, that, "*single flowers, or those raised from single ones,*" were the best as breeders, or seed bearers; and that, for the production of fine double flowers, it was important that the pollen, used for impregnation, should be borne on a petaloid anther, thus becoming petaloid pollen; and further, that this was still better, if from a double flower. Another precaution was to prevent the plant making any new wood, by cutting out the young shoots as fast as they appeared, thereby forcing as much nutriment as possible to the newly formed germ.

Practicing on these suggestions, and believing that every change effected by cross-fertilization is a remove from the normal form, and therefore more easily susceptible of continued mutations, I have preferred *hybrids* for bearing the seed; and in the selection of the flower to be impregnated, I

have had special reference to the strength and prominence of the style, the form of the corolla, and the perfection of its petals; and, I think, for raising varieties with double flowers, we are more dependent, than has generally been apprehended, on the kind of pollen used; viz., *that which is borne on a petal*; this petaloid change being, as I imagine, the incipient stage towards a full petalous form. I entertain the opinion, that varieties possessing the prerequisites thus described, when fecundated with this pollen, will, for the most part, produce double seedlings, with petals more or less multiplied, and not unfrequently, flowers that are full and symmetrical, and devoid even of the seminal organs. It may be here observed, that the larger and better developed *this petaloid* anther, the better the chance for a fine offspring, for, as Mr. Herbert remarks, "the corolla, in truth, belongs to the male portion of the flower, the anthers being borne upon it, or in some manner connected with it by a membrane."

That single or semi-double sorts with perfect corollas, are more certain to produce flowers of a regular symmetrical formation, I have pretty conclusive evidence, as will presently be shown; still, I have had good success with those raised from the pæony, or loose waratah formation, but the proportion of such has been less; and these have been more frequently stuffed with small petals, or their rudiments. This opinion, in relation to the latter class, I am happy to learn, is confirmed by the experience of Noel J. Becar, Esq., of Brooklyn, N. Y., who, practicing on these principles, has produced several fine varieties from *C. Midlemist*, *C. Colvillii*, *C. imbricata alba*, &c., one of which, of first rate properties, from *C. Colvillii*, by *C. Donkælarii*, was on exhibition at the rooms of the Society the past winter.

In corroboration of what has been stated, I adduce the following illustrations taken from my own memoranda; remarking, however, that the off-spring from the same capsule has varied much, although in my judgment conforming to the principles advanced.

HYBRIDS FROM SEEDS OF SINGLE VARIETIES.

From the Single Red, (the type of the genus,) by pollen of *C. punctata*.

CAMELLIA RICHARDSONII, a very full lilac crimson flower, with sixty to seventy petals, of the regular form.

CAMELLIA MARIA LOUISA, perfectly double and regular, sometimes hexangular, like *C. Lady Hume*; color deep rose, or crimson, with a peculiar metallic lustre.

CAMELLIA WILDERII, thus described in the Transactions of the Society: "flower delicate clear rose; petals seventy-five to eighty in number, beautifully imbricated and arranged with exquisite regularity."

From a large single hybrid crimson, by *C. Lindbriata*, a very full perfect flower, of the color of the female parent, much like *C. concinna* in form, but more double.

From *C. Aitonia*, by *C. alba grandiflora*; double white, large, nearly regular, but with occasionally a few anthers.

From Single White, by *Anemoneflora alba*; numerous white and parti-colored varieties, more or less double, the best of which is a full creamy white, striped with rose, like *Duchesse d'Orleans*, but not so regular.

EXAMPLES FROM THE SEED OF DOUBLE VARIETIES.

From *Camellia imbricata alba*, by pollen of the *C. variegata*; a double white, nearly of the regular form, with a few stamens.

From *C. King*, by *C. variegata*; a full symmetrical flower, very dark crimson, striped with white—peculiar.

From *C. elegans*, by *C. punctata*; an enormous large, globular, white flower, of the irregular shape.

From *C. Lindbriata*, by *C. punctata*; very clear beautiful pink; corolla and petals large, like the female plant, but not entirely full.

From *C. Lindbriata*, by *C. alba grandiflora*; a very thick, full, globular flower, white, striped with rose.

From *C. Colvillii*, by *C. Donkælarii*; a double symmetrical flower; color, delicate rose or pink, striped with white.

From the same, by the same, a very perfect double flower; color, clear rose.

From *C. punctata*, (male parent not known,) *Eurydice Augusta*, a perfect regular flower; color, light rose, broadly striped with white, and re-

sembles Pressley's Queen Victoria, but surpasses it in beauty.

From *C. Middlemist*, by *C. pomponia*; the fine white variety figured in Transactions of the Society; very circular, of great depth, full and perfect; occasionally suffused or touched with light rose.

Having explained my views in relation to the influence of petaloid pollen, I add, as proof, a few examples illustrative of the inefficiency of *simple pollen* to generate double flowers. This rule is not stated as invariable, but where the exception arises, may it not be from a state of transformation not visible to the eye.

From *Camellia pæoniflora*, by *C. Donkælarii*, several single seedlings, one of which, of the exact color of the former, and singularly veined with deep red.

From *C. Colvillii*, by *C. Donkælarii*; seedlings, with single flowers of various tints, but with no disposition to double.

From *C. tricolor*, fertilized with itself; seedlings, with white and red single flowers, but retaining in habit and foliage the character of the parent.

From *C. Donkælarii*, by itself, a fac-simile, in habit and foliage, but in flower resembling almost precisely the old single red.

Camellia myrtifolia, and *C. imbricata rubra*, having departed from their general double form, produced a few anthers, the pollen of which was seized on as most desirable for impregnating with, but the progeny of these crosses, although in one instance so similar in foliage to *C. myrtifolia* as hardly to be distinguished from it, brought only ordinary single flowers; these varieties seldom deviate from their usual perfect form, and it was therefore noticed, that none of the anthers were petaloid. The seedlings, also, of the Abbe Berlese and Mr. Herbert, raised from crosses by *C. myrtifolia*, were no better than mine, and Mr. H. declares his were "single flowered, and the worst he ever raised." To whatever cause this sporting from the accustomed habit may be attributed, and without regard to the agency which the female plant may have in generating double flowers, it is obvious that the pollen in these

instances was deficient in the proper ingredient, and further, that the circumstances which induced the blossoms to revert to the primordial stamp, also imparted to the plants a strange retardation of inflorescence; those of *C. myrtifolia* not coming to the flowering state, with me, until the seventh or eighth year, and with the Abbe not until the twelfth.

I have alluded in another place to the structure of the flower designed for seed, and although I place great reliance on the kind of pollen to be used, and doubt not that the juices of the style have, also, a corresponding duty to perform; still, I attach great importance to its perfection and substance; for where the style has been feeble, distorted, or so imperfectly developed as to exist in numerous divisions, my success has been quite limited.

Without, therefore, attempting to explain the mysteries of fertilization, or to define the line beyond which there can be no intermixtures or crosses of the vegetable kingdom, a point on which botanists are much in doubt at the present day, and with no pretensions "to breed to a pattern," or "to wash out the last tip of black from the pigeon's wing," I submit the foregoing observations, with due deference, to those better skilled in botanical science than myself.

There have been so many treatises published on the cultivation of the *Camellia*, some of which are quite elaborate, it would be superfluous to enter on it here. It may not, however, in concluding this article, be considered irrelevant, to add the following brief directions:—

The plants selected for fructification should be removed from the *Camellia* house to one of higher temperature; this will essentially assist fertilization, and in many cases render those fruitful which would not otherwise become so.

As soon as the flower to be impregnated is sufficiently expanded, the anthers should be cut out, taking care that this be done before they open, and that the pistil be not injured by the operation.

The stigma is generally ready for impregnation in twenty-four to thirty-six hours, when the pollen, if mature, may be applied, selecting, if practicable, the middle of a bright sunny day.

In five to ten days after the ovules are fecundated, the young capsule commences swelling, after which all new shoots should be removed and the plants, once a week, liberally supplied with guano water; this I have found a great aid in ripening full and perfect seed.

The seeds, when gathered, should be immediately labelled with their genealogy, and stored in pots of sand, kept moderately moist and warm; in about two months they will commence sending forth their young radices; as soon as these are perceived,

each seed should be planted in a small shallow pot, thus preventing the long tap, which in the common mode of planting descends to the bottom, without any horizontal or fibrous roots. The pots should then be placed in a mild hot-bed, or stove, giving a little air as the foliage becomes developed, and when they have attained the height of three or four inches, be removed to a shelf near the light, and carefully watered. When the first growth has ripened its wood, the plants should be shifted to pots a size larger, and if treated with liquid guano, will attain the first season eight to ten inches in height; these are now sufficiently large for inarching, and thus, in two or three years from the seed, you may generally prove whether the new hybrid be worthy of extension.

The compost for young plants consists of two parts well rotted turfy loam, one part leaf soil, and one part peat or heath mould, with sand to make it free.

POMOLOGICAL NOTES.

BY PROFESSOR KIRTLAND, CLEVELAND, OHIO.

[We copy the following interesting notes from a copy of our work on *Fruit Trees*, which Professor Kirtland, one of the most intelligent pomologists in the west, kindly sent some months ago, when we were revising the eighth edition of this work, just published. As many of them are worthy of the attention of fruit growers, and as only a portion of them could be made use of in our work, we take the liberty of preserving them in this form.

The copy of our *Fruits* in which these memoranda were written, has the appearance of being well worn; and on a blank

leaf, at the commencement, we find the following note in Prof. K.'s hand:

"This volume has performed a missionary tour to half the houses in this township, and has done much service by awakening a taste for horticulture in a class of people who own some of the best soil and localities for fruit in the United States, but who, beforehand, had little or no conception of the importance of cultivating it.

"They have not always washed their hands before turning over its pages."]

Grafting—p. 15. Side-graftings succeeds best for spongy wood, such as the peach,

magnolias, and ash. The magnolia takes freely if side-grafted and tongued, but will not succeed if the stock is amputated after the usual plan. The rose Acacia takes easily on the common glutinous locust, (*Robinia viscosa*), and makes a beautiful standard tree, if the graft be sloped upon one side and inserted under the bark, as in budding.

Influence of the Graft—p. 24. A graft of the *Green Newtown Pippin* will invariably render the bark of the stock rough and black, (the habit of the variety,) within three years after its insertion.

Sucker Stocks—p. 29. The loss of our pear trees, attributed to fire-blight, is very often the result of using suckers for stocks.

Pruning—p. 30. I doubt if much pruning (orchard trees) is proper on the shores of Lake Erie and the other great lakes. Trees of all kinds incline to form thick heads; and if thinned out freely, they generally soon decay.

Mulching—p. 45. A capital practice in transplanting trees. Decaying leaves from the wood are excellent for this purpose.

Well Trenched Soil—p. 50. The following paragraph must have the entire assent of every practical fruit grower in the country:—"Indeed, no fruit garden, where the soil is not naturally deep and rich, is in perfect condition for planting trees, unless the soil has been well trenched two spades in depth. This creates a matrix for the roots, so deep and permanent, that they retain their vigor and luxuriance through the drouths of summer, and continue for a long time in a state of health and productiveness."

Insects—p. 63. Our apple trees are often injured by the larva of the *Bupestis*, which will girdle out extensive portions of the bark and young wood. Page 66—*Apple*

Worm—the *Curculio*, and not this insect stings our apples.

Best Soil for the Apple—p. 69. Apples raised on the *limestone* hills in Ohio are richer and higher flavored than from any other locations.

Common Berberry.—Experience has convinced us, the pollen of this berberry will blast wheat and rye.

MEM. ON APPLES IN DOWNING'S FRUITS.

American Summer Pearmain.—First rate.

Benoni has not equalled our expectations.

Bevan's Favorite is a valuable summer apple.

Early Red Margaret.—Common and popular here, but much inferior to *Summer Rose* and *Bevan's Favorite*.

Summer Queen.—Good on warm sandy soils; poor on cold clay lands.

Beauty of Kent.—Showy, but of little value.

Golden Sweet.—Very valuable for swine; for which, along with clover, it forms the cheapest and best of food. Every farmer should cultivate at least 20 or 30 trees.

Gravenstein—excellent. *Jersey Sweeting*—valuable. *Maiden's Blush*—valuable for marketing; not high flavored.

Nonsuch—p. 91. The *Richfield Nonsuch* is the best winter apple with which I am acquainted. It was introduced there from abroad; true name not known. [We have since seen specimens of this fruit, from Ohio, that justify Prof. K.'s opinion. It proves to be the "Old Nonsuch" of Massachusetts, or Canada Red of western New-York, noticed in a previous page of the Horticulturist, but quite distinct from the English Nonsuch, described in our Fruits. ED.]

Rambo.—The *universal* apple of the German population in Ohio.

Seek-no-further.—Coxe's *Seek-no-further* is only a second rate fruit. Westfield *Seek-*

no-further—very excellent. I think it is the same as the “Marietta Seek-no-further” of this state.

Stroat.—Fruit excellent; tree not vigorous.

Yellow Bellefleur.—Fruit rather light and tart at the north; flavor higher at Cincinnati.

White Bellefleur, (?)—Is not this synonymous with *Woolman's Long*, or *Ortley Pippin*?

Detroit, or *Red Detroit*, (?)—Red Calville?

Doctor.—Fruit large, crisp, tender,—for eating and cooking. Tree vigorous. My tree came from Burlington, N. J. Can yours be correct?

Domine.—Cultivated in this vicinity as the “*Ramboulrette*.”

Jonathan.—Valuable; preferable to the *Esopus Spitzenburgh* in this locality.

Lady Apple.—Beautiful, but with us, subject to the fire-blight.

Newtown Pippin.—The *Yellow* is preferable to the *Green* in northern Ohio. Both thrive well, only on soil containing lime. Indeed, I have never known the *Newtown Pippin* to flourish, except on a limestone formation, or when the soil was supplied with lime.

Pennock—is not, and never was, worth cultivation; flavor *bitter* and sweet; subject to the *dry rot*.

Rhode Island Greening—on warm, sandy soil, yellow and fine flavor; on clay soil, the skin tough, flesh fibrous and sour.

Roman Stem.—20 years since, this was one of our best winter fruits; now, not so fair as formerly. I had it from Burlington in 1820.

Swaar.—Very excellent.

Esopus Spitzenburgh.—Not so good in Ohio as it was 25 years since at the east.

Winesap.—Best of all apples for baking;

drill out the core with a long and narrow knife, [or apple corer,] fill the cavity with butter and sugar rubbed together, place the apples in a hot, closely covered bake-kettle till they are cooked.

No. 184, (?), *Red Astrachan Crab*.—This is *dark red*, and very showy.

MEM. ON CHERRIES.

Black Tartarian.—Was cultivated in Wallingford, Ct., as early as 1810, under the name of “Double Heart,” or “Bishop's Large;” and in Middletown, Ct., in 1818, as *Black Tartarian*. In both cases, brought from N. Y.

Downer's Late—is becoming very popular in this vicinity.

Waterloo.—The *true* sort has never been cultivated here. [It is very scarce in this country; that usually sold being incorrect. ED.]

Bigarreau.—Very fine, but decays suddenly, as about to ripen. The tree is hardy and productive. The *White Bigarreau* is an indifferent bearer—the tree not hardy.

Napoleon Bigarreau.—First rate, except a little deficient in richness; very hardy and productive; a slight inclination in the fruit to decay.

New Large Black Bigarreau.—Obtained from Kenrick; proves to be only *Black Tartarian*.

Elton.—The finest fruit of the cherry kind; tree somewhat tender.

Belle Magnifique—has fruited two years with me; a good *acid* cherry, fine for cooking, and *very late*. Sept. first, *ripe fruit* still on the tree.

Grapes.—The crops of native grapes are more certain at Cleveland than at Cincinnati. *Bland* is not adapted to our climate. The *Catawba* ripens well, and is our best grape. The Ohio is rather tender for this climate.

The foreign grapes of the hardest kind do not succeed more than one or two seasons, while the vines are young, in the open air. After that, the fruits *mildew*.

Curculio, or *Plum Weevil*.—This insect, last season, destroyed every plum on my farm, except the crop of one tree in my swine lot; that tree is bending under its load of fruit. *I believe that swine and hens will effectually protect a large orchard of plum trees against the attacks of the curculio.* Persevering shaking off, and picking up of the punctured fruit will do the same, but requires much labor. This species of *curculio* breeds in our forests, and even in some succulent plants. In 1835, it was very abundant in Trumbull county, Ohio, though not a plum tree grew in that county in 1834. It seemed to emigrate in '35, from the woods. Instinct directs its movements. It will avoid trees standing in places where its larva or its chrysalis must evidently be destroyed; and I think this in part accounts for the effect of swine and poultry in interrupting its operations.

This insect is an epicure, and will usually select the tenderest and best varieties. But if hard-pushed for a supply of fruit, it will also attack the wild plum, the peach and the apple.

NOTES ON PLUMS.

Coe's Golden Drop.—Has not ripened well here for the last three years; requires a long season; have never known it very fine but once.

Diamond.—Prolific, but coarse, and des- titute of fine flavor.

Smith's Orleans.—Fine and valuable.

Pear Tree Blight—p. 322. I doubt whether the 1st or 2d view embraces the cor- rect *pathology* of "*Fire-blight*," as it pre- vails here. The disease seems to depend

on a peculiar state of the atmosphere—a *saturated state of moisture*, as manifested by the hygrometer, and a hot, *scalding* im- pression of the sun. Insects and frosts may produce a peculiar disease,—the latter oft- en kills apples, pears, and cherries, as de- scribed by Rev. Mr. BEECHER; but our west- ern blight is a morbid, vegetable action, *sui generis*—*contagious*, and it may be ex- cited into action by atmospheric vicissitudes. Bold and thorough *amputation* below the diseased parts, and burning all the limbs thus pruned off, is the only known remedy.

NOTES ON PEARS.

Belle de Bruxelles.—One of the best pears last season; trees received of Elwanger & Barry.

Bartlett.—Best of all pears, in my esti- mation, taking all circumstances into con- sideration.

Jargonelle.—Very popular, but not of much value.

Julienne.—Insidious with me.

Madeleine.—Very valuable; much supe- rior to the Bloodgood in 1846 and '47. [The Bloodgood far superior here, in all seasons. Ed.]

Beurré Diel.—Has not equalled expec- tations; flesh coarse and harsh; soil stiff clay. [Should be grown on quince stock. Ed.]

Beurré Van Marum.—Has fruited for four years; valuable; the fruit middling; very productive.

Dix.—This must be a seedling of the old St. Germain.

White Doyenné, [St. Michael's or Virga- lieu.]—I have cultivated this variety in Ohio since 1823, *and have never known it to mani- fest any signs of disease or decay.* It is now as healthy, vigorous and productive as it was when I first became acquainted with it in Hartford, Ct., in the year 1812. It is

not surpassed by any pear with which I am acquainted.

Gray Doyenné.—Tree rather less hardy than the foregoing.

Forelle.—Has fruited and proved fine in this neighborhood; but the tree is since dead with the blight.

Fred'k of Wurtemberg.—Well known; very handsome and popular here.

Marie Louise.—Excellent; but in order to obtain standard trees, must be grafted high on strong stocks.

Napoleon.—Very prolific and healthy; not equal in flavor to some other sorts.

Stevens' Genesee.—Promises to be first rate.

Beurré d'Aremberg.—Equals the highest anticipations.

Easter Beurré.—Does not always mature sufficiently in autumn here; occasion-

ally excellent; but will not rank with the foregoing.

Uvedale's St. German.—Valuable for cooking; very prolific.

Virgouleuse.—I obtained this sort from N. J. in 1824; the tree is still standing in Trumbull county, but never yet produced a perfect fruit.

Winter Nelis.—Is my favorite for an early winter pear.

Oranges—p. 543. May be budded either in *June* or in *August*. At the former season, employ last years buds; at the latter, buds of the first growth of the present year. Those of the June insertion may make a growth of a foot or more in August.

Duration of Varieties—p. 555. The old *White Doyenné* pear is as healthy and productive here as any *new* seedling.

REMARKS ON THE CULTURE OF THE DAHLIA.

BY AN AMATEUR, NEW-YORK.

I HAVE observed that very little has been said in your columns of the Dahlia or its culture. In the last number, I see allusion made to the new class of Dahlias, which has been originated within a few years. I mean the "fancy flowers."

These deserve all the praise that you accord them; as, with the sole exception of the *autumnal roses*, it appears to me that the Dahlia, in its more modern form, is the pride and glory of the garden from midsummer to autumn. Many of the new varieties are as perfect as the double white camellia, and as exquisitely striped as a carnation; and the continual succession of bloom which they furnish makes them indispensable in every garden where there is room enough for a Dahlia parterre.

Without going into any systematic detail

of the routine of Dahlia culture, I propose to offer a few hints, founded on some ten or twelve years practical experience. The English works abound with numerous directions for cultivating this plant; but our climate is so different from theirs, that very large departures from their rules are necessary.

It should be premised, then, that the great point in cultivating the Dahlia in the United States is to have a *deep soil*. Without this, it is almost five to one that you will fail to get a good succession of flowers. If the season is a moist one, the Dahlia will bloom profusely in almost any soil; but as the majority of our summers are hot and dry, the plants almost always get stunted and feeble, and produce few flowers in a thin or dry soil.

Many persons, also, err in supposing that fine Dahlias can be produced by crowding Dahlia roots into shrubby borders, and parts of the pleasure ground filled with the roots of trees. It may do very well to employ this plant as a material to fill up such places and produce what flowers it may; but whoever wishes *perfect blossoms*, and a *continual succession* of them, must *set his plants in an open, airy situation, where the soil has previously been trenched two spades deep, and well manured*.

In these two points, so far as my observation and experience are worth anything, lie the whole art of growing fine Dahlias. Trenching to the depth of 20 inches will give dark green healthy foliage, and well formed flowers in abundance, in a soil which, without trenching, will only produce lean and meagre plants, with weak shoots, yellowish foliage, and a few indifferent blooms.

Pruning I do not think should be too much practiced on the Dahlia. Certainly, a plant is improved by having the weak and slender side branches taken off, and a shoot here and there cut out, if the variety has a disposition to grow so bushy that the branches are too crowded to permit a proper display of the flowers. But beyond this, I think pruning is not needed with us, as it is in the damper climate of England; growth-exciting as the latter is.

Dampness, and a moderate temperature, the Dahlia delights in. I agree with you, that the Messrs. THORBURN bear off the palm as the great Dahlia growers of this country. They have, however, great natural advantages, possessed by few cultivators of this plant. Their Dahlia ground, at Astoria, is a deep, sandy loam, only a few feet above the level of the East river. Hence, the subsoil is always somewhat moist, and the atmosphere more or less humid at night. Their season is also pro-

longed by this position, as many of your readers, who have seen their magnificent annual exhibitions of this flower in John-street, in the month of October, must be well aware.

Very few people in this country care to take the trouble to compete with the English florists, with their many advantages, in raising new sorts of the Dahlia from seed. To those who do, however, the following hint is worth attention. Always save your seed from the outside row of the seed vessel, and not from the centre. Repeated experiment has proved that the former seeds will give *double* flowers and the latter single ones, with almost equal certainty.* The same thing is true of China Asters, and other syngenesious plants.

A good many amateurs, who cultivate only a few Dahlias, fail in preserving the roots through the winter. The failure usually results from too much pains-taking, drying the roots, putting them in a warm, airy place, etc. Now the Dahlia tuber will not bear a dry atmosphere; it shrivels and loses the vital power; and if packed away in sand, &c., it often decays. What it wants is a somewhat damp atmosphere, quite free from frost. No one who has a green-house ever experiences the least difficulty in preserving the roots; it is sufficient to lay them on the floor under the stage. Alternate moisture and dryness does not injure them, provided they dry and do not remain long wet.

A good cellar for potatoes will usually keep Dahlia roots also, if the roots are simply laid on the floor. A friend of mine, who failed several seasons in preserving them, from want of knowledge of their nature, informs me that he has succeeded perfectly since he has mixed them in the bins with

* I mean, of course, when the seed is saved from the best semi-double, or nearly double flowers.

his potatoes, covering them two or three inches deep in those bins intended for spring use.

I think the finest flowers are had from good plants turned out of pots from the 20th of May to the first week in June. September is the Dahlia month—*par excellence*; and though it is well to plant some strong roots in April to come into bloom early, the late planted roots will usually give the purest and most perfectly formed blooms.

I will add, in conclusion, that old sorts of Dahlias “wear out” in any given soil, like potatoes; that is, they do not thrive as

well after having been grown in one garden several years, as they did at first. It does not at all follow that the variety has really “run out” because this happens. Take it to a new soil, and it will bloom again as well as the first year the variety was “let out.” Hence, it is well occasionally to change the roots of a favorite old sort, as you would “change the seed” of a potato. But, in fact, the Dahlias of the last three years are so far superior to the old varieties, that they are the only ones sought after at present. Yours.

AN AMATEUR.

New-York, May 10th, 1848.

TRANSPLANTING EVERGREENS.

BY W. BACON, RICHMOND, MASS.

A. J. DOWNING, ESQ.—Having recently been looking over the numbers of the current volume of “*The Horticulturist*,” I have been exceedingly interested with several articles, from highly respectable cultivators in different sections, on “Transplanting Evergreens.” It is a subject which certainly ought to meet with altogether more attention than it does at present from every cultivator; for no rural spot, whether it be the environs of home, the public promenade, or the cool and refreshing park, can be perfect without them. They give beauty to the scenery wherever they are found. Not only by their beautiful symmetry, but by the contrast they afford in their rich and unfading foliage,—differing so widely in form in their own family, and so varied from that of deciduous trees. In spring, they are lovely; in summer, beautiful; in autumn, when maturity spreads its variegated colours over the forest and the grove, to give interest to the decay of nature, they

smile at biting frosts and cheerless winds; and when winter comes, “in her terrors clad,” they stand unchanged, amid howling blasts, and pitiless storms, and driving snows, like “*the friend that is born for adversity*.” Who does not admire them, and who would not cultivate them?

It is a sad fact, and one that we hope will soon be exchanged for a better truth, that many neglect all attempts at the cultivation of evergreens, from an impression that the risk is greater in their removal than that which usually attends the process on deciduous trees. Another reason which some will give, is, that they have attempted to cultivate them and failed, and they will, therefore, spend no more time in the matter.

As it regards the first objection, we must say, from our personal experience, that we will as soon risk success in their removal as in that of any tree whatever, (unless it be the willow, or some of the species that can

hardly be killed under any circumstances.) *Care*, we know, is necessary; and so it is in taking up and transplanting all trees, if the highest degree of success would be obtained. This is reasonable; for men have no right to expect success where they bestow no pains. But to our *experience* with evergreens.

In our first efforts in their cultivation, we had heard different seasons recommended as *the best* for their removal. In order to satisfy ourselves on this point, we have tried each month, from September to June inclusive, and with very fair success. So we are able to say, that with proper care they may be removed in any of the autumn months, in any part of the winter, whether the ground is frozen or not, and through all the busy bustling spring and early summer, at just such times as the convenience of the operator may dictate. For the very *best time*, as our labors will warrant, we would recommend that, when the bud is fairly bursting; and from that until the new growth has attained an inch in length. We have put them out when the new branches were three or four inches long, and the temperature of the atmosphere so high that they would wilt before reaching home, and, by copious watering for a few days, have those branches assume their usual position, and continue their growth. We have also had instances where these drooping extremities would dry up in spite of our labors to resuscitate, and seen new ones shooting forth from buds which had hitherto lain dormant, and might never have been called into action, had not a necessary cause appeared to push them forward. The better time, however, is before they advance in growth so far as to have new wood, which, in its first stages, is so tender and herbaceous, of sufficient length to droop.

Our method of taking up and putting out

again is somewhat like that of your correspondents, to whom allusion has been made. We get our trees from open lands, or sparsely wooded grounds, when we can. In this region, the fir, whose beauties all admire, is often found growing in old pastures on the high mountains. These pasture lands have a cold, moist, shallow soil, underlayed with an almost impermeable subsoil. In such localities, where the roots from necessity run horizontally and near the surface, there is but little difficulty in taking them up without loss of fibres or earth, especially if we take that sharp edged spade along to cut around the tree. The union between the soil and subsoil is not so close but that they will easily separate; and thus a tree may be removed in its native soil almost without loss of fibre. They may be set in a wagon in their growing position, and safely transported, by careful driving, to almost any distance.

Another method of obtaining is, to go into swamp lands, where old logs and stumps are always to be found in abundance; around and over these is often a shallow stratum of vegetable earth, formed by the decomposition of substances gathered round. From this, evergreens frequently spring; and as their growth increases, they push their main roots to a deeper and moister soil. We take an axe and cut off these descending roots; after which, by gently raising the tree, you can save a thousand fibres, and all the soil from which the tree drew its first nourishment. This is a very pretty way of obtaining them; for by it we save all the earth necessary without getting a burdensome quantity to lift.

In putting out, we have had but little regard to the soil or size of the pit, provided it is large enough freely to admit the roots in their natural position. Soft and light earth should be brought in contact

with the roots of all trees, in order to facilitate the first efforts of the roots in pushing in a new soil. Watering we have found necessary the first season after transplanting, as we have, for the most part, taken our trees from moist soils, which had given them aquatic habits. We never prune our evergreens, but let them form heads to their own fancy; throwing out their first branches at the ground, and thus forming beautiful cones if they choose. If pruning is preferred, however, it may safely be performed *after the first year*; and any form given to the head by the knife they will be likely to retain, as they are not like deciduous trees—disposed to throw out new shoots to supply the places of branches taken off.

We have found it an excellent practice to keep the surface around evergreens well

covered with leaves, especially in summer, when the rays of the sun fall most violently upon them. Leaves keep the earth cool and moist, which is a desideratum to their healthful growth. In their decay, they furnish a natural aliment to sustain and invigorate them.

We cannot but suppose that the culture of evergreens, when fully understood, will be perseveringly entered into through every section of our country. They will not only be raised to please the eye and feast the taste, but in northern and exposed regions, the time will come when they will be planted in belts around buildings and fields, to protect them from the rude blasts of winter and scorching sunbeams of summer, to which such regions are eminently exposed.

Yours truly,

W. BACON.

Richmond, Massachusetts, 1848.

THE FRENCH MODE OF SUMMER PRUNING DWARF PEARS.

BY PROFESSOR LINDLEY.

SUMMER has brought all sorts of inquiries about SUMMER PRUNING. It is needless for us to say that the practice has always been advocated in our columns, and we hardly know how to add to what has been so often urged already. Instead, then, of an argument, we will to-day produce some facts, which we glean from Mr. THOMPSON's account of his visit to Paris.*

In the Garden of Plants there exist certain pyramidal pear trees, which may, we believe, be regarded as the most perfect models of management that can anywhere be found. For ourselves we can only say that we did not believe till we saw them that such trees could be formed by art. Not a shoot too many or too few; not a

spur missed; not a branch misplaced. Had the trees been made up instead of being grown, they could not have been more admirably symmetrical. Mr. THOMPSON, who appears to have been as much surprised as we were, speaks of them thus:

“The pyramidal trained pear trees are from 10 to 15 feet high, or more, having a regularly tapering outline from the base to the top, where they terminate in a single shoot. The young plant is stopped according to its strength, and so as to furnish side branches. These are not in stages at uniform distances along the stem; on the contrary, almost every shoot which breaks out from the stem is allowed to grow; but the *laterals produced on these are pinched in summer*, and even such of the leading shoots

* Journal Hort. Soc., vol. ii., p. 202.

as appear likely to become too strong for the others, are stopped. M. CAPPE pinches all the young shoots, not required to form branches, *when in a very young state*; when they have scarcely pushed a finger's length, they are shortened to about 1 inch, or from that to $1\frac{1}{2}$ inch. The portion left forms the basis of one or more fruit buds, bearing fruit in the following season, or a spur on which blossom buds are formed for bearing in the second season.

"The advantages consequent on properly managing fruit trees with regard to summer pinching, are so important that attention to the subject cannot be too strongly urged. By the operation, the shoots necessary to be retained have the great advantage of more light and air than would be the case if crowded by a multiplicity of laterals, retained till the time of winter pruning, when they must obviously be cut off, either so close as to leave no bud to push, or shortened to within a few eyes of their bases. In the former case the branch is left naked; in the latter, when the tree is sufficiently vigorous, the eyes left generally push other shoots, to be again cut back in winter; and thus crops of shoots are annually produced, instead of fruit for many years, or until the tree approaches the state of old age.

"The plan which M. CAPPE pursues succeeds admirably in the climate of Paris. The fruit on the pyramid pear trees under his management is stated on competent authority to have been last year exceedingly abundant, large and fine. This season the trees are healthy and vigorous, and well furnished with blossom buds. It may be said that the generally dry, clear air of Paris is very different from the cloudy and moist climate of many parts of Britain; the one being favorable for the formation of fruit buds, whilst the other favors the growth of wood and leaves; and therefore, circumstances being different, the same

practice may not be equally proper for both. There are, moreover, instances of circumstances differing so widely as to require opposite methods of culture. But this does not hold good as regards summer pinching. In England the drawback is a dull atmosphere; the shoots and foliage want more air and light. Summer pinching affords this, inasmuch as it prevents the crowding and shading of wood and leaves necessary to be retained, by that which is superfluous; and therefore it must be considered of still greater utility in dull climates than in bright, more necessary in England than in France.

"Supposing the branches of a tree are properly thinned and regulated at the winter pruning, and that so far as they extend, their number is quite sufficient for the space they occupy; presuming, also, that the tree is in good health, a number of laterals are sure to spring. They are, of course, superfluous; and every one of them should be pinched as already mentioned. If the last year's shoot has been shortened at the winter pruning, then, besides the terminal one on the part left, one, two, or three next to it are almost sure to push; and these M. CAPPE commences to check by pinching when about three inches in length; but those nearer the base of the shoot he allows to grow till they attain the length of six or eight inches before he shortens them. The terminal bud is of course allowed to go on for the prolongation of the branch. It frequently happens in France, and the liability will be still more in the climate of England, that after a shoot is pinched back, the newly formed buds on the part left will push a secondary shoot in the same season. When this is the case with those under the care of M. CAPPE, *he also pinches these secondary shoots* to an inch or an inch and a half from where they originate. They rarely push again; but if they do, their growths are again reduced as before.

REMARKS ON RAISING CELERY.

BY R. L., LONG-ISLAND.

THE raising of celery is a subject that may appear to your readers to need very few directions, as it is so generally understood in our gardens. But having been more than usually successful in growing this fine vegetable on a large scale, perhaps a few remarks, giving the detail of my mode, may not be unacceptable to your readers.

I raise my crop of celery mostly for the winter's supply; and, to simplify the matter, I shall only speak here of the main crop. Those of your readers who wish to have it *earlier*, may easily do so by starting the plants in a hot-bed about the middle of March.

The best time for the sowing for the main winter's crop is about the 1st of April. Although I have succeeded perfectly well by sowing on a rich warm border, yet to insure against the accidents of a cold and untoward season, I usually sow in a slight hot-bed, and cover, as usual, with glass.

About the middle of May I choose a bit of ground in the warmest and richest part of the garden for the "stock bed." This, I prepare by digging it thoroughly, and mixing with the uppermost six inches of the soil as rich a coat of old manure as I can well incorporate with it. In this plat, or bed, thus well prepared, I prick out the plants from the hot-bed three inches apart every way,—watering them thoroughly every day when the weather is not damp or rainy.

Here they grow until about the 10th or 15th of June—the season for the final planting out. Having fixed up the ground for my celery patch, I have it well *trenched* two feet deep with a spade, if it has not

been trenched previously. In the trenching, I bury all the best top soil in the bottom of the lower spit, and throw the clayey or gravelly subsoil on the top. The reason for this procedure is obvious. You always set celery plants in a *trench*. If you take off half the top soil to make this trench, it is evident that you have but a very poor bottom left on which to grow celery. On the other hand, if you make the soil of double the usual depth, and put the best soil at the bottom of the two feet, it is placed exactly where it is of most benefit to the roots of the plants; while the poorer subsoil, being on the top, answers equally well to raise about the stalks, in order to blanch them.

Very well; at the 10th of June, then, I mark out my plat of trenched ground into trenches three feet from each other. The trenches themselves should be dug a foot wide and eight inches deep. You can scarcely make the soil in them too rich; and I have ascertained by experiment that the celery plant not only likes common stable manure, but is also very fond of bone dust, or horn shavings. I therefore, in preparing the trench, put half a *peck* of either of these substances to the soil of *every fifty feet* of trench, and a quart of fine packing salt. Then the whole manure, bone dust, etc, is well incorporated in the soil of the trench to the depth of six or eight inches, and you are ready for the transplanting.

It is best to do this in a dull or cloudy day. But if it is properly done, i. e., with *balls* of earth to each plant, one day will answer nearly as well as another. In order

to accomplish this, the stock, or nursery bed, in which the plants grow in their second stage, must be thoroughly saturated with water two or three hours in advance. Then, with a trowel, take up each plant separately, with a small ball of earth, lay the balls in a sieve or basket, and carry them at once and plant them in the trenches. If it is well done, as it may indeed be with the greatest facility, not one plant in five hundred will fail; and they will scarcely suffer the least check, and will require no shading.

About earthing-up the plants, in order to blanch or whiten the stalks, there is a good deal of difference of opinion; but it is all easily reconciled. If you wish *very large* plants, you must not commence blanching till the last three or four weeks. If you do not care about the size of the celery, but only the *delicacy* and *crispness* of flavor, you must commence earthing-up about the middle of August; doing it frequently, and very little at a time, in fine dry weather.

The two best sorts of celery that I have tried are *Seymour's White Solid*, and *Red Solid*. But, after all, I have raised as heavy and as fine plants of the *Common White*, by the mode here given, as of either of those varieties.

A word or two about *keeping celery for winter use*, may not be out of place here. Many persons complain of the difficulty of

keeping it in winter—its rotting in the cellar, root-house, etc. The method I have employed for nine years, is a very simple, easy one, and I have never lost a single head by it, though I have raised and kept many thousands. It is as follows: In November, when the frosty weather sets in, and the time for digging the plants comes, choose a high and dry part of the garden in any convenient place; level it, and begin at one side to open a shallow trench, deep enough to *lay-in* the roots of the celery close together, burying them in an *inclined position*, so as to cover all the blanched part of the stalks,—only leaving the green leaves at the top exposed. The next row may be put within three inches of the last, and so on, row inclining upon row, till the whole is laid in. In this compact way, the space required for a large crop will be only a few feet square. This done, cover the whole, as soon as the winter sets in, with *two and a half feet of straw*, covered with a few bits of wood to keep it down. This will most effectually keep out all frost, while the temperature of the soil itself is so low that there can be no decay or change in the plants. At the same time, by removing a portion of the straw on one side, the celery may be reached at any time during the winter when required.

Respectfully yours. R. L.

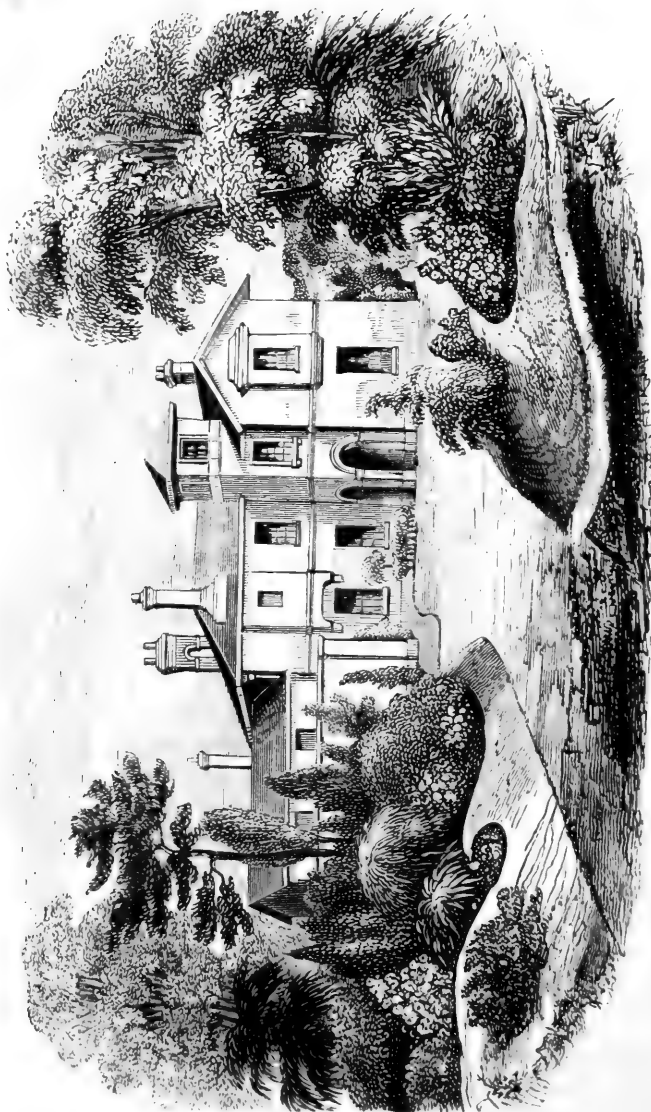
Long-Island, May, 1848.

A VILLA IN THE ANGLO-ITALIAN STYLE.

OUR FRONTISPIECE shows a very pleasing example of this style of country house, which we borrow from one of Mr. Loudon's publications, as a specimen well adapted for many sites in this country.

The Italian style is much more simple in its details than the Gothic. It is therefore

cheaper in construction. It also more readily adapts itself to a variety of scenery and locality, and is, we think, on this account more likely to give pleasure generally than the Gothic style; for though nothing can well be more charming than the latter, when built in suitable landscapes, its effect



AN ANGLO-ITALIAN VILLA

[Fort June, 1812]

is often destroyed by the tame and bald character of the surrounding scenery. For suburban dwellings, especially, simple modifications of the Italian style are always satisfactory.

The villa shown in the frontispiece of this number is one called *Fortis Green*, situated in the suburbs of London, and the property of W. A. NESFIELD, Esq., a landscape painter of eminence. It is picturesque in its exterior, as one would expect the residence of a landscape painter to be. And an examination of the interior plan will show what are considered *desiderata*, in England, in a villa of this class. The references to this plan are as follows:

- a. Drawing-room.
- a a. Green-house.
- b. Dining-room.
- c. Passage.
- d. Staircase.
- e. Entrance porch.
- f. Closet.
- g. Way to cellar, from kitchen and glass closet.
- h. Kitchen.
- i. Scullery.
- k. Stairs to servant's room.
- l. Laundry.
- m. Store-room.
- n. Tool-house, at end of which is the stoke-hole to the green-house.
- o. Passage to the yard.
- p. Larder.
- q. Coal hole.
- r. Wash-house.
- s. Pump.
- t. Yard.
- u. Stable.
- u u. Dung pit.

The chief difference between this plan and one of a villa of the same class in this country, is the superior accommodation afforded to the *kitchen offices*, and the near proximity of the stable to the house. In the arrangement of the kitchen offices, the English are more perfect, indeed, than any other people, and we have much yet to learn from them. In this country, this por-



Fig. 61.—Plan of the Principal Floor of the Villa.

tion of our domestic establishments, even in houses of a superior grade, is often comparatively cramped and meagre; a feature which, in the end, is always found to be antagonistical to the comfort of the family in all its branches.

Fortis Green is a suburban place of only four and a quarter acres of ground. Of this, one and a quarter acre is occupied by the house, and ornamental and kitchen

garden; the remaining three acres are devoted to sheep! Mr. NESFIELD's amateur farming is more profitable than that of most sheep farmers, we are certain. His practice is to buy in autumn, at Smithfield, two ewes per acre. Then in March he buys eight tegs, (last year's late lambs.) The whole are again sold in autumn in fine

condition. Mr. *Loudon* has given the detail of the management and *profits*; the latter being, for the three acres, £18, 15s, 10p. per annum. The pasture surface of the three acres is divided by hurdles; and the latter are moved every ten days, so as to give the sheep a "fresh bite" from time to time.

POOLE'S PREMIUM GARDEN ENGINES AND SYRINGES.

EVERY good gardener knows how useful and indispensable a good hand syringe, or small engine, is for all plants cultivated under glass. The pores of the leaves can no more be closed by dust, without injury to the perspiratory system of a plant, than diseased lungs can exist without endangering the life of an animal. Frequent sprinkling over the foliage keeps the breathing function in perfect order, and thereby contributes to the luxuriance and vigor of almost all plants.



Fig. 62.—A Green-house Syringe.

Having had inquiries for machines of this kind from various correspondents, we are induced to publish cuts of several,

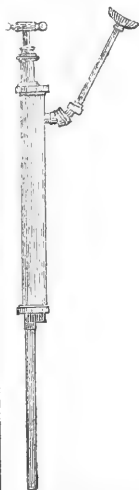


Fig. 63.—A Small Hand Engine.

manufactured by Mr. MARK POOLE, of New-York,* which, for excellence of workmanship and efficiency, are equal, if not superior, to any that we have yet seen.

Fig. 62 is a green-house syringe, after Read's patent, acknowledged to be the best yet brought into use. The different forms represent the same syringe with the various *caps* to regulate the stream of water discharged. *a*, shows the cap used when a simple stream of considerable force is required; *b*, a cap like an ordinary rose, for throwing a gentle shower; *c* and *d*, are crooked and goose-neck caps, to turn the shower in any oblique direction, as desired.

Fig. 63 is a small hand engine, of very convenient size, where the plants to be watered are within a small compass. It is readily placed in a watering pot or pail of water, wherever it is required.

Fig. 64 is a large and very perfect brass *hand engine*,—one of the neatest pieces of workmanship that we have seen. It unites a power almost equal to the barrow engine,

* The agents in New-York are Messrs. J. M. Thorburn & Co., 15 John-street.



Fig. 61.—A Brass Hand Engine.

with the facility of transportation of the small hand engine. It throws a powerful and steady stream of water, and may be placed in a pail or cask of water at any convenient point, or made a fixture, if the latter is preferred.

Fig. 65 is called the *barrel engine*. It is intended, properly, for large hot-houses, to be filled and carried by two persons to any desirable point; it being more easily managed than a barrow engine within doors.

Fig. 66 is a barrow engine, and is a most efficient watering machine for out-of-door uses,—lawns, flower parterres, washing diseased fruit trees, and the like purposes. It is also a useful protection against fire when first discovered; being always at hand, and easily worked by one person. This engine is very perfectly constructed, and the water box is provided with a strainer to prevent any impurities in the water from entering the valves, so as to derange its operation.

These engines are all constructed after the latest pneumatic improvements. The facility with which they are worked, and the volume and uninterrupted flow of the stream or shower discharged, render them greatly superior to the old machines, with



Fig. 65.—The Barrel Engine.

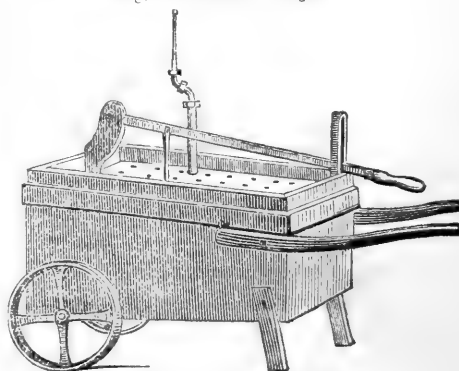


Fig. 66.—A Barrow Engine.

the simple valve and air chamber of the common forcing pump. We are glad to be able to recommend them to our readers as very superior and complete implements, which are certain to give entire satisfaction.

DESIGN FOR A GEOMETRIC FLOWER GARDEN.

BY DR. WM. W. VALK, FLUSHING, L. I.

I SEND you a plan for a geometrical flower garden. It was designed by Mr. Brown, gardener to the late Duke of Buckingham, and is a very pretty thing of the kind.

When the nature of the ground will admit,

the French parterre, or geometrical flower garden, is, above all others, the most to be recommended, for many situations, because it readily admits of the largest display of flowers throughout the season. There is

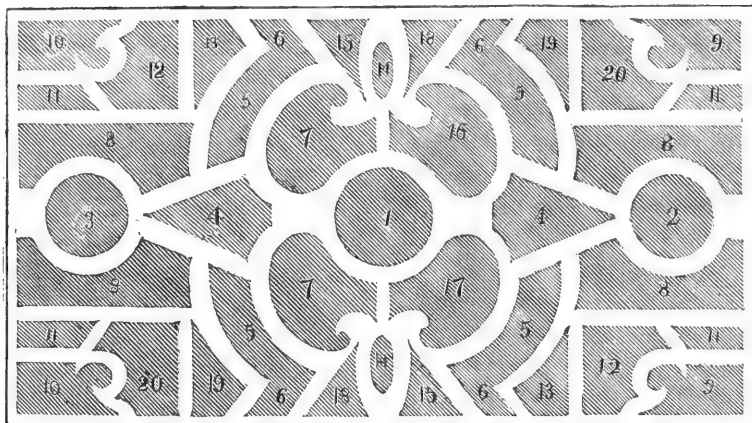


Fig. 67.—Design for a Geometric Flower Garden.

scarcely any difficulty in producing a splendid show once or twice in the year, spring and autumn; and in consequence of many gentlemen not residing all the season near their flower gardens, the gardeners have an additional advantage in such places to produce, at the required time, the best display of flowers. If a constant supply is required, much care and attention are necessary. The parterre gives great facilities. Planting in masses produces the most imposing effect; arrangement of the beds, and contrasting of colours, is the chief thing to be considered; succession of plants is also indispensable; the propagating by cuttings, seeds, &c., and keeping in reserve to turn out when a bed is prepared to receive them.

If there is no green-house, cold frames will answer for wintering almost every requisite plant for the flower garden in the spring, provided the glass be covered with sufficient matting to keep out frost; frames will be required to raise tender annuals. The above plan would look best with gravel walks and small box edgings in front of a green-house or a dwelling. In planting the beds, very much will depend upon the proprietor's taste with regard to

his favorite flowers. Nevertheless, if the beds be planted in the following manner, very general pleasure and satisfaction will be given.

In the adoption of the plan, the scale must be adapted to the space of ground occupied.

The beds will be planted in spring as follows: 1, Hyacinths of sorts; 2, Tulips of sorts; 3, Narcissus of sorts; 4, Violets of sorts, Standard Rose; 5, Crocuses of sorts; 6, Violets of sorts; 7, Herbaceous Plants and Roses; 8, Hyacinths of sorts; 9, Ranunculus of sorts; 10, Anemones of sorts; 11, *Mathiola annua*, scarlet and purple, turned out of pots; 12, Herbaceous and Annuals; 13, same as 11; 14, Violets of sorts, Standard Rose in centre; 15, *Æno-thera macrocarpa*; 16, Ranunculus, bordered with Snowdrops; 17, Tulips, bordered with Snowdrops; 18, same as 11.

In summer and autumn, the beds will contain—1, 2 and 3, choice Dahlias; 4, *Verbena melindres*, Standard Rose; 5, *Calceolarias* of sorts; 6, *Fuschia gracilis* and *microphylla*; 7, Herbaceous and Roses; 8, *Heliotropium peruvianum* and scarlet *Geraniums*; 9, *Salvia fulgens* and *splendens*; 10, *Salvia fulgens* and *involuta*; 11, *Lobe-*

lia, erinus and *albus*, Standard Rose ; 12, Herbaceous and Annuals ; 13, *Mathiola annua*, sown in spring ; 14, Violets of sorts, Standard Rose in centre ; 15, *Enothera macrocarpa* ; 16, *Campanula pyramidalis* and *Lobelia fulgens* mixed ; 17, *Campanula persifolia* and *Lobelia splendens* ; 18,

Mathiola annua, scarlet and purple, sown in spring.

Like the design figured at page 504 of your journal, this will, also, I think, have a charming and gay effect.

WM. W. VALK, M. D.

Flushing, L. I., May 9, 1848.

NOTES ON THE CULTURE OF THE APRICOT.

THE apricot is looked upon generally as a difficult fruit to grow ; and, comparatively, little attention is paid to its cultivation.

Yet, it is a fruit which deserves more attention. Beautiful, and of agreeable flavor, its greatest merit, perhaps, is that it is in perfection at precisely that period when there is little or nothing else in the way of fine fruit.

In this neighborhood the apricot is a common fruit tree, and, in many cases, bears regular and excellent crops. We have a neighbor, about two miles distant, who is a very zealous fruit grower, and whose grounds occupy a table or flat, about 200 feet above the level of the Hudson. He has for several seasons grown crops of Moorpark and other finest apricots, as abundant as we have ever seen peaches or apples, and of delicious flavor. His trees are standard trees, grown in the open orchard, with no unusual care. The soil is a deep loam ; and the site is one that secures him against spring frosts, while the curculio scarcely molests him. Mr. DUBOIS, of Dutchess county, on the opposite shore of the Hudson, also raises the variety known as his "Early Golden" apricot, in the open orchard, in great abundance. We saw, in 1846, two wagon loads of baskets of this fruit going to market from his trees.

There are two serious obstacles usually experienced in growing this fruit tree. The first, is the early season at which the blossoms expand, rendering them liable to spring frosts ; the second, is the fondness of the curculio for the young fruit, and the difficulty of preserving the crop against its attacks.

Regarding the first obstacle, we would observe that there is a capital error committed by most cultivators in the *position* which they usually give this tree. Being considered a tender tree, it is almost invariably placed in a warm and sheltered site, *open to the sun*,—such as the southern side of a building, wall, or fence ; or, at least, some particularly sheltered slope or nook in the garden.

Directly the opposite aspect is the proper one for this apricot. Wherever this tree will bear the winter's cold, (that is, wherever the peach can be cultivated, in the northern states,) there is never any difficulty in ripening either its fruit or wood in midsummer. The heat and light of the sun are fully sufficient for this, in any Indian corn district, without a southern exposure.

By all means, then, if the district is one liable to spring frosts at the blooming season, put your apricot trees in a cool aspect,

—the north sides of buildings, walls or fences, or the northern sides or slopes of your garden or orchard. Here they will be later in advancing in spring, and the blossoms will escape destruction by frost five times out of six. If a single cold night, notwithstanding, should threaten to rob you of a good crop, make a fire on the ground and cover it with damp tan-bark, placing it in such a position that a slight smoke will rise and protect the tree or trees endangered.

With respect to the curculio, that is a matter worth some serious attention; for, indeed, it is this little mischief maker which destroys ninety-nine hundredths of all the apricots in the country. Here, in our heavy loam soils, he finds but a poor place for his winter quarters, and his numbers are few. But in light sandy soils, he often punctures and destroys whole crops, year after year.

There are two modes of combatting this insect. If you have only a single tree or two in your garden, the easiest and most complete mode that we have tried, is to lay a cart load or more of fresh stable litter under the tree, as soon as the blossoms fall,—doubling the dose at the end of a week, if the insect is very abundant. This usually protects the tree in question; the fumes of the manure driving away the curculio.

But in a real curculio district, the most thorough, indeed, perhaps the only thorough mode of operation, is to adopt the plan pointed out in our last number (page 505,) by a "Pennsylvania Subscriber,"—that of planting all plums, apricots, nectarines, and other smooth stone fruits in a quarter by themselves, *adjoining the hog-pen*, and allowing the swine to have "free run" of the orchard for a certain part of the year. We have seen this tried with complete success in two instances, and have, therefore, entire confidence in recommending it.

Hundreds of our readers, in particular sections of the country, who scarcely ever get a fine apricot or plum, because they are all punctured by the curculio, may, by this easy arrangement of their trees, get large and regular crops.

With respect to the varieties of apricots in cultivation, there is nothing yet known in this country superior in size and flavor to the *Moorpark* and *Peach* apricots. They are beautiful and fine fruits, growing with us as large, or larger, than the *Early York Peach*. Among the new sorts that we have proved lately, the *Large Early*, and the *Large Red*, are both very delicious varieties, only inferior in size to the *Moorpark*. The flesh of the *Large Red* is in colour a fine dark orange, sweet and juicy. Both these sorts have borne with us for three years past.

The *hardest* apricots known, are the *Roman*, the *Early Golden*, (Dubois'), and the *Breda*. These will endure frost, and bear good crops, in many situations where the other varieties fail entirely. Hence, they will be prized in many districts of the country where the larger varieties cannot be cultivated as open standards.

The *Early Golden* is perhaps the most *prolific* of apricots. It is of medium quality. The old *Roman* is well known, and is chiefly valued for its earliness and hardness. The *Breda* is much the finest flavored of the three, and deserves to be much more widely known than it is at present in the middle states.

A severe storm, followed by frost, occurred here about the middle of April, this season. The apricot trees were in full bloom; and though it very rarely happens in this locality, (owing to the ameliorating influence of the river, which is a mile and a quarter wide,) that fruit is destroyed by spring frosts, yet that all the apricots would

Fig. 68.—The *Breda* Apricot

perish, with this temperature, (the thermometer standing at 28° ,) seemed inevitable.

We find, however, that three sorts have withstood the frost. These are the Roman, the *Breda*, growing in our own garden, and Dubois' Early, in the garden of a neighbor. These sorts have set good crops, and have, therefore, distinctly proved their greater hardiness.

The *Breda* apricot, like the other two, is a small variety. But it bears heavily; the fruit growing in groups or clusters on the branches, and the tree forms a broad bushy head. The fruit is a beautiful dark golden yellow in colour, round in figure, moderately juicy, and quite sweet and rich in fla-

vor. It hangs on the tree sometime after ripening, and is altogether one of the most desirable sorts for general cultivation. We observe that Mr. RIVERS, the English nurseryman, says, in his Catalogue, it is "the only variety that succeeds as a standard" in that country.*

There are few persons who know how excellent these small hardy apricots—the common Roman, Early Golden and *Breda*, are for tarts,—gathered at the last thinning of the fruit, just before it commences to ripen. Apricot tarts are more piquant and delicious to our taste than those of any other fruit.

* A spurious sort is sometimes cultivated under this name. The true *Breda* is round not oval.

PLANTING BY THE SEA-SIDE.

BY JAMES GRIGOR, NORWICH.*

TO RAISE trees by the sea-side is one of the grandest triumphs of arboricultural skill. To plant *anywhere* successfully, confers peculiar satisfaction on the planter; but to raise a sylvan bower, whence the grandeur of the ocean can be closely contemplated, is in every respect more interesting and important. It is almost unnecessary to wait to enforce this position. The sea—one of the grandest features in creation—is viewed with awe and delight by all; but, in almost every instance, what a picture of sterility is spread out along its shores! Even our most fashionable watering places, with reference to their natural scenery, may with truth be represented as “dull and treeless.” I shall therefore conclude, that to invest such scenes with rich sylvan furniture, is a point worthy of the closest attention.

Where has such a thing been done? will no doubt be the first question. To this I reply, that the examples are to be seen on the cliffs of the German Ocean, in the parishes of Runton and Trimmingham, in the county of Norfolk, the property of Sir Edward North Buxton, Bart. There are in all about twenty plantations in these parishes, extending over a space of about 120 acres, but I select one in particular, which will afford a striking illustration of successful maritime planting; it is called the “Boreas Plantation.” The plants stand on a bold cliff, 250 feet above the level of the sea, towards the north-west, and part of them only twelve yards from the beach. Standing, on this plantation, the beholder looks down upon a wide expanse of the ocean, which is here literally whitened by

the sails of the Scotch and Baltic traders. Its commanding prospect has recommended it to the officers of the Preventive Service, for here their watch-house is erected. This, then, is the locality.

How it has been planted is the more important question; and here I shall take care to state the details minutely. The first thing to be done, is to have the soil trenched with the spade, to the depth of 20 or 24 inches. This will cost 6*l.* per acre. Cheap processes of planting in such situations will prove of no use; they have been tried repeatedly with no success; and I have little hesitation in stating that it cannot be done effectually without the preparation alluded to. When trenching is put out to be done, at so much per perch, I have known unprincipled men leave about a third of the ground undisturbed. It should therefore be done either by the day, or with the understanding that if any part of the soil should be found unbroken, the price of the whole would be withheld.

2. The time for planting is of the greatest moment. All planting by the sea-side should be done during the month of March, or in the first fortnight in April. The plants will thus be free from the cutting winter's winds, until they have established themselves in their new situations. Some will no doubt go and try a half measure, by planting at the proper season on *untrenched* soil: let them do so—success cannot be theirs. It should be continually borne in mind that planting, under the present circumstances, is not at all *encouraged* by Nature; it is a union of the wild and tame which, though permitting, she does not fos-

* From the London Hort. Magazine.

ter; and Art, therefore, has to use her utmost exertions to compensate for the want of that encouragement.

3. So difficult is the work of maritime planting, that, in addition to the land being well prepared, and the best season chosen, there must be *shelter* created; and this should be done in two ways—as an outside work, by erecting a strong high fence of furze bundles, or brushwood, around the plantation, and by planting the young trees very close to each other, leaving only about a space of eighteen inches between them. At this rate, 19,000 plants will be required for every acre of land.

4. Cleaning the land for two years is all-important. The best plan is to take a crop of carrots or parsnips from the land the first year; and this will pay all the expenses of hoeing, &c., and do no injury to the trees.

The next point is to select the kinds of trees best suited for such a situation; for, if this should be neglected, the other instructions, as a matter of course, would be rendered useless.

The first deciduous tree adapted to the situation under consideration, is the Norfolk Black Sallow, a variety of the *Salix caprea*, thought by some to be peculiar to Norfolk: it is a most determined grower, even close to the water, and a tree which attains to a large size. In the parish of Runton, in the neighborhood of the sea, is a specimen which, at four feet from the ground, is nine and a half feet in circumference. It was the appearance of this tree, in such a situation, which led to slips of it being tried in the plantations above referred to. The quality of the wood of the Sallow is by no means first rate; and it is rather recommended as a nurse to others here mentioned, than as fit to occupy the ground permanently. However, in some maritime situations, any sort of tree

would be gladly accepted, and, as it is not devoid of beauty, it should be planted where those of a better texture do not thrive. It will give some idea of the vigor with which this tree proceeds, when I state that, after the second year, it throws up shoots an inch and a half in diameter at the bottom; and, if trained to a single stem, it will become a tree twenty feet high, in four years. Slips or cuttings are quite equal to rooted plants, and there is a great saving in carriage in ordering the tree in the former shape.

The next best deciduous tree is the Black Italian Poplar, which may be readily obtained of any nurseryman. It is late in leafing, and to this circumstance, I think, is to be attributed its success in the situations under consideration.

The Scotch Elm forms a noble addition to the few trees suited to grow by the sea-side. On untrenched soil this plant becomes bark-bound, and covered with lichen; but, where its roots have liberty, it grows very rapidly.

The Alder is also to be recommended in plantations adjacent to the sea. Damp or swampy land is usually planted with Alders, and it is sometimes thought that it delights only in such soil; it is found, however, to grow luxuriantly in dry places, where the soil is loosened to the depth of two feet.

The Birch, Larch, and Ash do not always refuse to grow by the sea; and, with the aid of the Sallow for a few years to start them, I have found they succeed very well.

Amongst evergreens, the best tree is the *Pinus Pinaster minor*, a more robust grower than the common *Pinaster*, with shorter and thicker foliage. It is plentiful in the extensive *Pinaster* plantations of Jack Petre, Esq., Westwick, Norfolk, and it is there called the *false* Pine, the common *Pinaster* being termed the *true* Pine.

Very little inferior to the foregoing, as a maritime tree, is the Scotch Pine, *P. sylvestris*. Its wood is superior to that of the Pinaster, and, if the better variety, with red wood, is obtained, a more valuable tree can scarcely be had.

Amongst shrubs, my experience is not so extensive. The following, however, I have proved to be fitted to stand the sea air. The Elder, Snowberry, Berberry (*Berberis Aquifolium*) and the common Broom.

One other point has to be attended to, I mean the size of the plants. Cuttings of the Sallow will grow freely, and the other plants should not exceed four years in age. Plants which had been transplanted in the nursery the year previous to that in which they are used, are to be preferred to any others, for such are invariably furnished with small fibrous roots.

With such trees, planted at the proper season on well trenched soil, I should have no fear of being able to raise plantations on the sea-coast, wherever there is any depth of soil. A beach of pure sand can never be made to bear any sort of ligneous vegetation; but all other situations, and especially our watering places, which now present a scene of frightful sterility, are quite capable of being made green and shady. I am aware that sea-side planting forms a work often undertaken, and as often unsuccessful; but still, *there is a way* by which success is certain, for no tract of land can be more exposed, or nearer to the sea, than the "Boreas Plantation," now flourishing in defiance of those obstacles which, till lately, were considered insuperable.

FOREIGN NOTICES.

THE POTATO PROBLEM:—The solution of the Potato Problem is accomplished. At least, Professor LIEBIG thinks so. In his last work* he declares that the potatoes are attacked with influenza. "The cause of the disease is the same which, in spring and autumn, excites influenza; that is, the disease is the effect of the temperature and hygrometric state of the atmosphere, by which, in consequence of the disturbance of the normal transpiration, a check is suddenly, or for a considerable time, given to the motion of the fluids, which is one chief condition of life, and which thus becomes insufficient for the purposes of health, or even hurtful to the individual."

To say that the potato crop has caught cold, is new. But when we read in the same place that the cause of the cold, or influenza, is impeded perspiration or "suppressed transpiration," the novelty ceases. "The potato plant," says the learned chemist, "obviously (!) belongs to the same class of plants as the Hop-plant, namely, to that class which is most seriously injured by the stagnation of their juices in consequence of suppressed transpiration. According to KNIGHT, the tubers are not formed by swelling of the proper roots, but by the

development of a kind of underground stalks or runners. He found that when the tubers underground were suppressed, tubers were formed on the stalks above ground; and it is conceivable that every external cause which exerts a hurtful influence on the healthy condition of the leaves and stalks, must act in like manner on the tubers. In the districts which were most severely visited by the so-called potato disease in 1846, damp, cold, rainy weather followed a series of very hot days; and in 1847, cold and rain came on, after continued drought, in the beginning of September, exactly at the period of the most luxuriant growth of the potatoes."

In this at least there is no novelty. It is the same view as that taken by ourselves in this journal in August, 1845, when the disease first broke out, which was very generally adopted, but which we have long since shown to be erroneous. The opinion was just that which would be formed upon the first hurried glance at the phenomena, but which a full knowledge of the facts soon compelled its advocates to relinquish. The only material difference that we remark between Professor LIEBIG's discovery and the old hypothesis now referred to, consists in his introducing it in 1848 as something new, and surrounding it with an array of

* "Researches into the motion of the Juices in the Animal Body." By JUSTUS LIEBIG, M. D. Taylor and Walton. 8vo.

quotations from the experiments of HALE which are familiar to every student of vegetable physiology, together with some observations of his own on the motion of fluids in living bodies, the connection between which and the potato disease we fail to discover.

We wonder that Professor LIEBIG should not have perceived that the seasons of 1845, 6, and 7, in all which the disease was prevalent, were very dissimilar; we wonder still more that he should not have weighed the mass of valuable evidence that has been collected on the subject in every country in northern Europe, before he jumped to his present conclusion. It is still more extraordinary that he should not have asked himself why impeded perspiration, influenza, cold, or whatever else he terms the disease, should not have attacked the potato crop before the year 1845, and should have continued to do so every year since through seasons essentially different from each other.

It would seem, however, that men cannot reason calmly upon this subject. To our great surprise we find Dr. GREGORY, the translator of Professor LIEBIG's work, appending to it Doctor KLOTZSCH's proposition as confirming his author's speculation. What Dr. KLOTZSCH's proposition is, our readers have learned from Sir ROBERT SCHOMBURGK's translation of it in our last number. He thinks that by strengthening the potato plant it will be better able to resist the disease, an opinion that we have expressed a hundred times. He believes that this strengthening may be effected by repeatedly stopping the growth of the branches by pinching off their shoots, so as to strengthen the tubers and prevent those changes which result in the production of flowers and fruit, or, as he terms it, "to restrict the metamorphosis of the leaves." What that has to do with impeded perspiration we are unable to perceive. His object is to give the plant more vigor, by diverting into a smaller number of leaves the food obtained by the roots and sent upwards into the stem, which food, under ordinary circumstances, is dispersed through a large number of leaves. In principle this method is like our English plan of destroying the flowers, and which has not been attended with success; for although in the experiments in the Garden of the Horticultural Society, in 1847, topped or stopped potatoes were less diseased than others untopped, yet disease existed in both cases, and the difference was only as 9.56 to 13 per cent. There are, however, some peculiarities in the plan of Dr. KLOTZSCH which make it desirable to try it this year exactly in the manner which he indicates. So far, however, from pretending that the disease is impeded perspiration, he expressly declares himself "unable to explain the nature of the disease."

For ourselves, we regard it with as much uncertainty as ever; of this, however, we are persuaded, that be it what it may, it is not explained by our

own original hypothesis, now produced as a novelty by Professor LIEBIG. (*Lindley.*)

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ON THE CHOICE OF FLOWERS.—We will suppose the possessor of a garden is desirous of making it as interesting and gay as possible during the coming season, and is asking our advice in the matter. The reply must be regulated by various circumstances which modify the arrangements necessary for this end, such as the present state of the garden, whether stocked with trees and shrubs or not, whether large or small, and whether much of it is laid down in grass. Many things are essential to the beauty of a garden besides good flowers. In autumn and winter the general laying out should be attended to, and if alterations of taste are demanded in the arrangement of the grounds, they must be deferred for the present. Our advice will relate to the general question, and point out what productions will make a garden of ordinary size more beautiful and attractive.

The old custom is to sow seeds of annuals in every vacant spot, and let them take their chance for the summer. Now annuals are very well in certain connections, but their general growth is indicative of bad taste, for they are mostly of straggling habit, and soon lose their beauty. I would have very few annuals in small gardens, and they should be of the dwarf kinds, such as *Clintonia pulchella*, the *Mesembryanthemums*, *Nemophila*, &c., which may be selected from a scientific catalogue, like that published by Mr. James Carter, of Holborn. This catalogue I have found of the greatest utility, as it describes the colour, size, time of flowering, and general habits of all plants raised from seeds. As to Sunflowers and Hollyhocks, and all such giants, they are inadmissible in small gardens. The Hollyhock is a great favorite of mine, but it must have room, and be seen from a distance. Nothing can be more inimical to the good adjustment and tasteful appearance of a garden than a crowded state of vegetation, shading the beds. No plant will come to perfection in such circumstances, and before autumn there will be a mass of entanglement, defying all efforts to arrange it, and demanding rooting up as the only remedy.

The Rose naturally is first in the list of plants which every garden may properly cultivate. It will submit to narrow limits, and may be had in pots for turning out, so that an amateur may have a choice collection of Roses at once. Beds of these are recommended, as well as isolated specimens. The China, Bourbon, and Hybrid Perpetual varieties may now be procured cheap enough, and if planted now, every advantage will be secured. Let the purchaser be well convinced of the honesty of the parties from whom his stock is procured. The writer once ordered a small collection of Hybrid Perpetuals in April, and received, instead of strong plants, little things which had been struck

in heat, were scarcely rooted, and which after three years still look dwarfish and sickly. Even nurserymen of first rate character are apt to forget the impossibility of plants doing well, when removed from a green-house to a garden. Disappointments of this character, to our certain knowledge, injure and restrict the trade in flowers.

Next to Roses come the tribes of exotics, which are adapted to our summer climate and make such a gorgeous show. Scarlet Pelargoniums, Verbenas, Petunias, Fuschias, Calceolarias, and many others, offer to the amateur opportunities of gratifying his taste at a small expense. These may be arranged according to the various colours, and will continue to bloom profusely until the autumnal frosts. They are, most of them, compact in their growth; their foliage is less deciduous than that of annuals; and their whole appearance has that tropical character which gives such a charm to gardens in the present day. The expense may be an objection, but such things become cheaper every year, and if the reader is disposed to acquire the easy art of propagating plants for himself, the first expense is the only one. Before the summer is past, a few purchased plants will have spread so as to allow many cuttings to be made from them, which in methods afterwards to be described may be easily preserved during the winter. We lay much stress on the employment of shrubby exotics for the adornment of summer gardens, because it is found by experience they are kept in order easily, and are inimitable in their power of furnishing exquisitely varied groups. *H. B. Gardeners' Chron.*

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PECHE REINE DES VERGERS, (the Orchard Queen Peach.)—The *Pêche Reine des Vergers* is stated in the "*Portefeuille des Horticulteurs*," for December, 1847, to be one of the most important introductions of the season, inasmuch as it supplies the desideratum of a variety adapted for succeeding as a standard; for as such it produces abundantly, and its fruit is equal in size and flavor to the finest wall varieties. It was discovered by M. Jamin, two years ago, at Lores, Department of Maine-et-Loire.

The tree is vigorous; shoots of an intense violet red next the sun; the petioles, which are short and thick, are also tinged with the same colour, and are furnished with several glands (which appear from the drawing to be reniform.) The fruit is somewhat oval, but depressed at the summit like the *Grosse Mignonne*; it is fourteen centimetres, or five and a half inches in its vertical diameter, and twelve centimetres, or four and seven-tenths inches transversely, and hence upwards of fourteen inches in circumference. The skin is of a fine purple next the sun, and golden yellow where shaded; the down is fine and short. Flesh white, rayed with red at the stone, from which it parts freely, melting, perfumed, and vinous. The stone is large. The fruit ripens towards the end of September;

when ripe its perfume is powerful, and widely diffused.

When we take into consideration the superior climate of France compared with that of England, we will not be disappointed should this variety be found not adapted for a standard in this country; but if it maintains a superiority on an east or west aspect, or even against a south wall in situations where other varieties prove too tender, we may be satisfied with the acquisition. *Gard. Chron.*

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RHUBARB—This wholesome and agreeable vegetable has become so popular as a substitute for fruit in the early spring, that no garden should be without it. It will grow anywhere, is so hardy that no frosts will injure the roots, however much exposed, and is so prolific that a few plants will yield a plentiful supply of stalks for a large family. Yet, notwithstanding the ease with which it is cultivated, we often see it badly grown, and sometimes hear the complaint that parties have failed in their efforts to get a crop. Our remarks will obviate every objection, if attended to, and enable our readers to grow rhubarb for themselves with ease and success.

Rhubarb has a hard underground stem, which pushes forth buds plentifully at the crown, or part nearest the surface; every one of these buds taken off with a portion of root adhering to it, will form a large plant in one season. If you wish to make a plantation now (although the season is rather too far advanced, it may still be done,) get as many buds or crowns as your bed will admit of, allowing each two or three feet every way, according to the habits of the varieties you prefer. The plan generally adopted is to purchase as many roots as are necessary to fill the allotted space, but this is a more expensive and far less eligible method than the one now recommended. Last year a new sort of rhubarb was offered in the neighborhood of the writer at 5s. a plant. Some of his friends purchased four or five roots, but he was satisfied with one. On receiving it he placed it in a hole, and covered it up with soil until February, when, on examination, five good buds were developed. The root was then divided into five parts, each of which, at the present time, is a large, flourishing plant, equal to any of those which were not divided. A bed was thus obtained for five shillings, equal, indeed superior, to some costing twenty-five shillings. We are convinced, from actual experiment, that rhubarb may be brought to perfection in one year; that old beds are inferior to new ones; and that fresh plantations should be made every two years. The old plan of making a bed to descend to posterity should be exploded, in reference to many garden productions. Strawberries, raspberries, rhubarb, &c. &c., should be removed often, if fine healthy produce is wished for.

Having a sufficient number of buds or crowns,

let them be planted in a well trenched and manured soil. If the leaves are developed, care must be taken to prevent their flagging. This may be done by placing over them some long litter, sufficient to answer the purpose without excluding light and air. The young plants will soon be established, and will grow rapidly. No leaves must be taken off the first year, as the object is to convey all the elaborated sap possible to the stem for future use. If the ground is good, and kept free from weeds, no more care is required, and abundance of fine stalks can be taken off next spring. An exposed situation, with plenty of sun and air, will of course bring this production to greatest perfection; but it will produce good crops without having these advantages fully. Every house with a garden, however small, may thus furnish the table of its owner, with little expense and trouble.

But rhubarb possesses the advantage of being forced with as much ease and as cheaply as it is grown in the open air. This may be done by growing it against a wall in a sunny aspect, and covering it when required with pots or boxes, over which fermenting materials must be placed. But decidedly the best method is to take the roots into the house to be forced. For this purpose they must be grown exactly as recommended above, that as much power may be treasured up in the roots as possible. To take up exhausted plants from a crowded bed, which has been stripped of its leaves during the season, is to deprive them of their natural advantages, and to expend the forcing process on weakened and imperfect subjects. Let cuttings, with a crown to each, be now put in, in the best possible situations, and by autumn they will be admirably adapted to your purpose. When the foliage is withered take up the roots, and put them singly into large pots or boxes. These may be stood away anywhere, and introduced, two or three at a time, into a warm situation. The writer placed his pots this winter in a dark closet, at the back of a kitchen range, and the rhubarb grew rapidly. Every house can find some spot having the advantage of greater warmth than the ordinary temperature. Rhubarb may thus be had at any time, and a good supply kept up until it is produced in the open air. It is very necessary to get it as early as possible, as its value is much lessened when gooseberries are plentiful. *H. B. Garden-er's Chron.*

THE FORMATION OF BUTTER.—Upon this important subject I forward for insertion an article from the "Year Book of Facts" (1846); in which I think "Hantonians" will see his idea fully carried out—the air-churn. "The Bishop of Derry has invented the atmospheric churn. Instead of the present unscientific mode of making butter by churning, his lordship accomplishes this measure by the simpler manner of forcing a full current of atmospheric air through the cream by means of an exceedingly well devised forcing pump. The air

passes through a glass tube, connected with the air pump, descending nearly to the bottom of the churn. The churn is of tin, and it fits into another tin cylinder provided with a funnel and stopcock, so as to heat the cream to the necessary temperature. The pump is worked by means of a wheel, which is not so laborious as the usual churns. Independently of the happy application of science to this important department of domestic economy, in a practical point of view it is extremely valuable. The milk is not moved by a dasher, as in the common churn; but the oxygen of the atmosphere is brought into close contact with the cream, so as to effect a full combination of the butyrateous parts, and to convert it all into butter. On one occasion the churning was carried on for the space of an hour and forty-five minutes, and 11 gallons of cream produced 26 lbs. of butter." *E. Hulme.* [The inventor is a Mr. Weston, of Liverpool—not the Bishop of Derry.] *Ag. Gaz.*

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THE PROPAGATION OF FRUIT TREES AND OTHER TREES FROM CUTTINGS.—From observation I am inclined to imagine that many kinds of fruit trees, deciduous ornamental trees, shrubs, and roses, may be propagated from branches and cuttings, a plan which appears to me to be of some importance; for almost every orchard, plantation, shrubbery, and rosary bears witness to some extent that unsuitable stocks for budding and grafting have been selected.

A circumstance that occurred in the spring of 1845 served to confirm my opinion, that many trees and plants could be successfully cultivated from branches and cuttings. During the winter of 1844, a considerable quantity of refuse prunings from the shrubberies, parings of grass edgings, sweepings of walks, and refuse from borders, were accumulated for the purpose of being converted into useful manure by charring. The beginning of February, 1845, was chosen for packing it together for that purpose; there were from 20 to 25 loads of it, and the greater proportion of it was in a green, moist state, intermixed with a considerable quantity of earth, and therefore it took a considerable time to char. The weather the whole time was severe frost, with a cutting north-east wind; nevertheless, the charring went on satisfactorily, and when accomplished, on taking the heap to pieces for the purpose of sifting and storing away the contents in a dry situation, I was delighted to observe at the base of one side of the kiln that a quantity of moss-provins and other rose prunings, together with *Jasminum fruticans* and branches of other plants, had put forth abundance of beautiful healthy roots. They had been cast upon the kiln at the finish of packing, and had become intermixed with the sweepings and rakings of half decayed leaves, gritty sand, and other earthy refuse; others within a few inches of those that had put forth healthy roots were completely

charred. The hint thus given I imagined might be turned to a useful account, and it struck me were tanks or gutters erected on a good principle in the open air, so as to afford bottom heat at the desired season, choosing healthy, suitable soil, and placing it on good drainage over those tanks or gutters, that cuttings prepared at a proper season, and inserted methodically in the soil, would strike with success.

Not having a convenience of this description myself, however, I resolved, when the pruning season of 1845 came round, to select cuttings of various fruit trees, such as apples, pears, plums, cherries, medlars, peaches, nectarines, apricots, some deciduous forest trees, shrubs, and roses, and to prepare them, some by cutting close to an eye of the young wood, and others by baring at the base an inch or two of the previous year's wood. They were laid in by the heels until the beginning of February, 1846, and taking the hint from observing the condition of the refuse prunings at the char-kiln, which had been lying about for some time previous to the materials being collected and packed for charring, I had a kindly hot-bed made with well wrought tree leaves to the height of about 30 inches, then about 3 inches of healthy loam, with some charred saw dust were mixed with it. On these I placed an old wooden frame, not so much for the sake of shelter as for seclusion to carry out my experiment. The cuttings were then placed in the soil at various depths in rotation, a kindly lining of the same material as that of which the bed was formed was placed all round; and the outside to the top of the frame all round was then thatched with furze faggots; this kept cold winds from the lining, giving the whole the appearance of a little furze stack. The result turned out to my satisfaction. I found that almost any deciduous tree or plant might be made to put forth abundance of roots, and formed into healthy plants, if all matters appertaining thereto were carried out on good and systematic principles.

Some fruit trees, however, are greatly improved by being budded or grafted on proper stocks, and the same holds good to some extent with other trees, shrubs, and roses, &c.; but I have observed that the properties of others have been very much deteriorated through their having been worked on unsuitable stocks. On the other hand, I have also seen many trees entirely fail, after good preparation had been made for them at a considerable expense, and at the very time when it was reasonable to suppose they should have made some return in the way of fruit; and others, again, have changed their naturally good properties; and therefore, that some of the first attempts to produce healthy, thrifty plants by this process may fail, it is not unreasonable to suppose, still I have seen quite enough to convince me that the thing may be accomplished to a considerable extent. I

have often observed, on turning leaves, rubbish heaps, &c., that, besides branches of trees and shrubs having pushed forth healthy roots, green stakes, thrust into hot-beds for the purpose of ascertaining the degree of bottom heat, have under peculiar circumstances put forth roots. Others, again, have put forth strong shoots, only however to a certain extent, without roots; but I had never, previous to the spring of 1845, given such matters any particular consideration, with a view to discover why such things should happen, and the following facts may possibly throw a little light on the matter.

The last gentle forcing asparagus bed I had made that year (1845) for producing asparagus, until it came in naturally, was a kindly made bed of half decayed leaves, &c., from other hot-bed linings. The necessary soil and roots were placed on it, and a slight protection formed with stakes placed on the sides, with some temporary wood battens across and tied to the stakes on each side, for the purpose of holding up clear from the surface of the bed some evergreen boughs for keeping off the morning frosts, a plan which I find to answer very well for the last gathering of forced asparagus. Some rubbish faggots, made of refuse prunings, had been placed close by for sheltering other hot-bed linings; I pulled out of those faggots three branches, lopped off the side branches roughly, pointed one end, and thrust them into the asparagus bed for heat stakes. Time passed on, and the asparagus over; in the first week in May I proposed pricking a quantity of young celery plants on the bed, but looking about I observed strong shoots had burst forth from all the three stakes, and on pulling them up each was well rooted from the earth's surface to the depth of about 6 inches, and the size of the stakes thus far considerably increased, while the part below the roots remained unincreased. Two of the stakes were *Fraxinus excelsior*; both happened to be placed the bare end downwards into the bed, while the other, a common laurel, was by chance thrust in top downwards, and was beautifully rooted; its buds (of course pointing towards the bed) had pushed several strong shoots from 4 to 10 inches in length, and had turned up horizontally from the stake which had been thrust in slantingly.

From this and other facts of a similar nature, it has appeared to me that abundance of healthy plants may be produced from branches and cuttings if properly selected, and at the right season methodically placed on bottom heat, the latter being maintained only a sufficient time at the proper season; and, at the same time, the whole of the branches or cuttings left above the surface of the soil should be fully exposed to the open air. *Jas. Barnes, Gardener to the Baroness Rolle, Journal London Hort. Soc.*

DOMESTIC NOTICES.

ILLUSTRATIONS OF MEDICAL BOTANY, (consisting of colored Figures, large quarto, of the Plants affording the important articles of the *Materia Medica*, and descriptive text by JOSEPH CARSEN, M. D., Prof. Mat. Med., &c. &c. Philadelphia, Robt. P. Smith, 1848.)

It is gratifying to observe the progress of American art in the production of accurate and finished works in the different branches of Natural History.

That the taste and demand for really excellent works of this kind is surely increasing, is proved by the successful publication of such works as Audubon's magnificent collections of birds and animals of America, Michaux and Nuttall's beautiful series of plates of the American trees, and others of similar character. We are now gratified by the addition to this series, of two beautifully executed volumes of illustrations of the plants used in the *Materia Medica*, by Dr. Carsen, of Philadelphia.

They have been taken from nature, as well as from a great variety of the best and most authentic authorities, with care and judgment. The medical value of the work, which from the high commendations of the principal Medical Journals, must be great, does not lie within our province, but as a valuable contribution to botanical science, we cheerfully recommend it to our readers. We would notice in particular the beautiful plates of the *Cerasus serotina* (wild cherry) and the *Cornus florida* (dog wood,) taken from nature, as being beautifully and faithfully executed.

HEATING GREEN-HOUSES.—In some late files of the *Gardener's Chronicle*, published in London, and edited by Prof. LINDLEY, I find strong recommendations by the editor, and numerous contributions in favor of "Polmaise heating" conservatories, vineries, &c., without any explanation of the necessary apparatus of such a mode of heating.

Will you have the kindness to state in your interesting journal, if it be adapted to the cold climate of Canada, and to give such an explanation of the plan of such mode of heating, that any good mechanic may understand it?

I am just completing a viney 210 feet in length, 18 feet in width, and am desirous of ascertaining if the Polmaise heating can be advantageously applied.

I send you the first report of our Horticultural Society. I have proposed to our committee to offer a premium to the practical gardener who possesses the greatest amount of knowledge in Horticulture, including chemistry and engineering and landscape gardening, so as to be able to take levels, and lay out grounds, as well as cultivate them well. It would, I think, tend to excite a spirit of emulation among gardeners in the study

of their profession. Yours, very respectfully,
William Lunn. Montreal, April, 1848.

["Polmaise" is an excellent mode of heating, inasmuch as it provides a circulation and supply of fresh air for the plants. We fear that in the mode applied in England, it would not be found of sufficient power for the climate of Canada—but the principle—that of a warm air chamber round the furnace into which cold air enters, and from which warm air issues into the house—may be applied with the aid of the old system of flues or water pipes. We will endeavor to give some explanation, and the necessary illustrations of "Polmaise heating," soon. ED.]

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GENERAL CONVENTION OF FRUIT GROWERS.—Allow me through the widely read columns of the *Horticulturist*, to suggest the propriety of holding a convention of fruit growers the coming autumn in the city of New York, to exhibit, compare, and test the qualities of all such fruits as may then be at maturity. The first week in October would probably be a convenient and suitable time. The convention might be composed of delegates from the various Horticultural Societies, and such fruit growers as chose to attend.

I cannot but think that such a convention would have a tendency to produce unanimity of opinion respecting really desirable fruits, to establish a more correct nomenclature of the varieties already in cultivation, and bring practical men in close connexion—all of which I deem of great importance to the community at large.

The sessions of such a convention might be adjourned from year to year, thus making it a perpetual institution, if its labors were found useful. Yours, &c., Thomas Hancock. Burlington, N. J.

[Our correspondent's suggestion meets with our entire approval—committees from the different societies, and fruit growers generally, would be able to bring together a vast number of the finest fruits of the Union. Comparison, and the free expression of opinion as to the merits of varieties, would soon enable the convention to determine the really good sorts from the indifferent. We are satisfied that while this is left to individual preferences, and local prejudices, this kind of winning the wheat from the chaff must go on very slowly, or not at all.

New York appears to us to be the point to hold such a convention. It is more central to fruit growers and pomologists from north, east, and west than any other of our larger cities. We hope to hear the opinion of other correspondents on this proposal for a general convention, and trust a plan may soon be matured for its convocation.—ED.]

PENNSYLVANIA APPLES.—*Friend Downing*—A little typographical error occurred in the names of two fruits alluded to in my letter published in the April No. of thy paper; which I by no means wish to attribute to the men of types, remembering with becoming modesty my somewhat notoriously illegible hand. It should have read "Smokehouse" instead of "Smathehouse," and "Tulpehocken," instead of "Tulpehacken."

This latter is sometimes called the Pound apple, and since writing the above letter I have conversed with some of the most intelligent fruit growers of this county, who believe it entirely identical with the "Fallawater," a very popular variety in some sections of this State, where it is the best known, particularly in Berks county among the German farmers. There too the Tulpehocken is raised in great perfection, and as it bears the name of one of the townships of Berks, it is in all probability the Fallawater dressed up in a new name by some admirer of the fruit resident in Tulpehocken in honor of his district—having in all probability forgotten the true name. There is also a variety known as "Pims' Beauty of the West," considerably disseminated in the nurseries about Philadelphia and in New Jersey, which will quite likely prove to be this same fruit. John Pim, formerly of this county, removed to Ohio, and some fifteen years back, came in on a visit to his native place, bringing with him some grafts of a superior variety of apple. From these grafts a nurseryman raised two trees and named the variety in honor of his friend Pim. One of these trees stands some two miles southwest of us, and is the parent of the stock now in cultivation. The tree is a fine thrifty grower and bearer, and the fruit is deemed very fine. If this variety should really prove to be the Fallawater, it will unsettle some catalogues, and therefore is a question of some interest to the propagators of fruit. Will not some one throw light upon the point? If able, I shall forward specimens of the fruit to the Horticultural Society of Philadelphia, or other competent judges, this fall, for the purpose of ascertaining the facts if possible. Sincerely thy friend, J. F. Chester co., Pa.

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EFFECTS OF THE WINTER AT THE NORTH.—The past winter has been a disastrous one to the cultivators of fine fruit, in this region. The fruit buds of the peach, apricot, and the fine varieties of cherry, were all killed. The plum trees have here and there a straggling blossom, while the common sour red cherry has a good show of them, and the native wild plum is in full bloom, not a bud injured. The pear trees are in blossom as usual, and the apples promise well also. The wood of tender trees has been unequally affected by the winter's cold. The peach has not been much injured, while some varieties of apricot have been nearly destroyed. The Hemskirk is scarcely touched, while the Breda, Blotched Leaf, and Moorpark, are severely injured. Dubois' Early apricot, plant-

ed out last November, has passed the winter without injury. The young wood of bearing plum trees, even the Peach plum, is not hurt, while most of the latter variety in the nursery, even two or three years from the bud, are killed. Our grape vines, Bland, Catawba, &c., passed the winter safely. I have lost only a few Brown Beurre pear trees in the nursery, their growth being moderate, from one to two feet, while the pear trees of one of our nurserymen, in highly manured ground, which made a rank growth, are almost entirely destroyed. Taking advantage of a rainy day, I have been looking over the record of the weather, which I have kept since October, 1829: and I think it will afford us some encouragement. The earliest blossoming of the apricot and plum, was the 15th April, 1834, and the latest 18th May, 1835, and 1841, being a difference of 33 days. The apricot fruit buds, have been killed three times during this period, while the peach have suffered eight times. The plum buds have been extensively killed, only in 1835, and 1848. Fourth January, 1835, the thermometer was 32 below zero; 11th January, 1848, it was 21 to 24 below. As a general rule, if the mercury does not fall below zero till after the middle of January, the fruit buds are less injured than if it happens in December, or early in January. The winter of 1835, '36 was long and severe, the mercury being below zero more than thirty mornings and evenings, during December, January, February and March. And although the ground being deeply covered with snow, remained unfrozen all winter, yet large bearing peach and quince trees were killed to the ground; some sprouted and have been bearing for several years. Yours truly, Charles H. Tomlinson. *Schenectady, May 9, 1848.*

[The season, here, has been favorable, and there is promise of a fine crop of all kinds of fruit.—Ed.]

....

TO PREVENT THE ATTACK OF THE ROSE-BUG. *Sir*—I noticed in the Horticulturist of August last, the complaints of "A Jerseyman" against the rose-bugs, and he inquires whether there is any remedy. I have, for several years, applied a simple, easy and effectual remedy for them. Take dry ashes—those taken up in the kitchen the same morning are the best because driest—and with some little paddle, or a transplanting trowel, throw them plentifully into all parts of the tree or shrub while the dew is on, and the earlier the better. A repetition on two or three mornings will be well at first—after that, a little watchfulness will discover whether any further application will be necessary. These bugs frequently destroy the tender shoots of young cherry trees and the blossoms of our grapes in this section of country. I have never known a plentiful sprinkling of ashes, for a few times, fail of saving the trees or securing a crop of grapes from their ravages.

I have used the same remedy for the curculio on the plum tree, and have never known it fail of

saving the crop when begun in season, and followed up regularly two or three times a week. After a rain it should be immediately renewed. *R. Newton. Worcester, Mass., May 10, 1848.*

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THE WHOLE SECRET OF RAISING CRANBERRIES.—By *B. G. Boswell, Philadelphia.*—Now that ten times the quantity of this valuable fruit is cultivated above what there was forty years ago, and yet the price is full one hundred per cent. higher than formerly, and when it is now shipped from Boston to most of the middle, and the southern, and some of the western States—to the West Indies, Europe, and even to the East Indies—it seems perfectly natural to inquire if the fruit cannot be grown in different and various sections of the country.

We have written so often on this subject as to be nearly ashamed of writing another word; but knowing that thousands of the friends of Horticulture are totally unacquainted with its cultivation, we proceed to give the best method of culture on *wet, moist, and dry soils.*

The soil may be sandy, gravelly, loamy or mucky—but the more muck the better. *Clay* soil should be particularly avoided as it will bake in dry weather, and the cranberry never flourishes on this kind of soil.

SWAMP SOILS.—Where this kind of land can be drained, and then ploughed and harrowed, it makes a most desirable soil. Strike out furrows, two feet apart, and set in the plants six inches apart in the furrows or drills—care being taken to put all the root part of the plant below the surface. Keep the ground clear of grass and weeds the first season by hoeing. In general no cultivation is needed afterwards, and in two or three years the vines will completely cover the ground. Frequently some fruit is produced the first season.

Abundant crops are yielded when the vines cover the ground; three hundred and twenty bushels to the acre having been produced.

Where swamp ground is situated so low that it cannot be drained, cover it during winter with sand or gravel to the depth of about three inches—this will kill the grass—dig small holes and set out six plants together in a hill two feet apart each way. Where a person has a field of plants growing, *sods* of the plants, three or four inches square, may be set out three feet apart each way. Fine plantations have been made in this manner.

MOIST UPLAND, is treated in the same manner as *drained swamp land.*

Dry upland should have some swamp muck put in the furrows, previous to setting the plants, if convenient.

Gathering the fruit.—Cranberry rakes are now used in Massachusetts, with which one man can gather fifty bushels in a day—and although these rakes tear the vines somewhat, yet the crop is not diminished; on the contrary, it is increased. Some years ago a farmer in Massachusetts commenced

raking his little patch of one-fourth of an acre. The first year it produced twelve bushels, the next eighteen, the third twenty-five, and so on till he gathered sixty-five bushels, or at the rate of two hundred and sixty bushels per acre.

This increase is easily accounted for—the pulling up a few vines loosens the ground, and although not intended, yet in fact the raking acts as a partial cultivator.

Shipping the fruit.—Previous to shipping cranberries, the berries should be run over a platform slightly inclined—across this platform should be nailed some common plastering lath six inches apart. The bruised fruit will not run off but stick fast on their way down the platform; and are scraped off and thrown away, or else sold at a reduced price. If the fruit is to be sent to Europe or Asia, it should be put into tight casks, and when headed up, filled with water. In this manner they arrive in Europe in perfect order, and have frequently sold in England and France at twenty dollars per barrel.

Ten thousand plants will plant out nearly a quarter of an acre. In three years, from this fourth of an acre several acres may be planted out from plants of one's own raising. The plants may be set out in November, in the fall, and from the opening of spring until the 20th of May. *B. G. Boswell. Philadelphia, May 17, 1848.*

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MR. LONGWORTH'S STRAWBERRY CHALLENGE ACCEPTED.—*A. J. Downing, Esq.*—I have been so pressed with correspondence and other avocations that I have reluctantly deferred for some time past a portion of my duties to the public and to myself. The amateurs of Pomona and of Flora will, however, in the result realize that I have not been idle “in *taking* notes,” if I have appeared remiss in their annunciation. The “Strawberry Question” will in the finale be solved by more substantial means, than by such falsified quotations, misrepresentations, and plagiarisms, as I perceive the public have had palmed upon them of late, and which will at leisure receive their merited rebuke. My present object is to say but few words, and those direct to one of the points in the controversy. Mr. Longworth, whose opinions are entitled to the highest respect, and consequently to a full investigation, has repeatedly offered a reward of \$500 for the production of any staminate variety of the strawberry, that will produce a full crop. Indeed he has stated that he never yet had one such variety “that would average one quarter of a crop,” and again in a letter to me, “you cannot produce the plant that will average one quarter of a crop of large perfect fruit from what you call a perfect plant; much less can you one in which both organs are perfect in all the blossoms,” and in another letter to me commenting upon various staminate varieties, he says, “your *Primate* is S., and very large and productive. This surely may claim the \$500.” In order to obtain a fair under-

standing, I addressed a letter to Mr. L., asking him what he would deem a full crop, entitling the plant to the premium offered of \$500. His answer runs thus: "I am certainly explicit enough as to what I expect for \$500, and from your catalogue, you have the very kind. A perfect plant, bearing an abundant crop of large perfect fruit. I do not even ask this; one that will with similar cultivation, average half the crop of large perfect fruit that the Hudson, Hovey, Necked Pine or Pistillate Keen, will do, will satisfy me." I wish now to state that, I ACCEPT THE CHALLENGE, and I ask the appointment of an arbiter to meet one I will appoint, and to prevent delay I now select J. D. Scott, Esq., one of the Secretaries of the Long Island Hort. Society. I trust there will be no delay on the part of Mr. Longworth, as the season of maturity will be earlier this year than the last. Yours respectfully, Wm. R. Prince. *Prince's Linnean Botanic Garden and Nursery, Flushing, L. I.*

Amateurs of the strawberry are invited to view my collection when in fruit. It comprises specimen beds of above 100 select, prolific, and highly estimable varieties, covering one and a half acres. Those who are lovers of fine fruit may be glad to know that I distribute all the fruits from my grounds gratuitously, and never have sold any.

COMPARATIVE PROGRESS OF SPRING.—I have for the last ten years carefully noticed the progress of vegetation, to ascertain the forwardness of the seasons about the 1st May. My observations have been made from the same trees, shrubs and plants in my garden.

Vegetation had advanced to a certain state on the following days, viz:

May 9, 1839.	April 18, 1844.
May 2, 1840.	April 27, 1845.
May 15, 1841.	April 24, 1846.
April 23, 1842.	May 10, 1847.
May 9, 1843.	April 30, 1848.

Thus April 18, 1844, the earliest season, vegetation was as forward as on May 15, 1841, the latest in the ten years—the present year is about an average. *G. Pomfret, Conn.*

HORTICULTURAL SOCIETY OF THE GENESEE VALLEY.—List of officers for 1848: Levi A. Ward, of Rochester, president. John Williams, of Rochester, 1st vice president; Alfred Fitch, Riga, 2d do.; John R. Murray, Mt. Morris, 3d do.; Henry P. Norton, Brockport, 4th do.; Asa Rowe, Sweden, 5th do. James H. Watts, Rochester, treasurer. Leander Wetherell, corresponding secretary. Joseph A. Eastman, recording secretary.

MARTYNEA FRAGRANS.—After many vain attempts to get the *Martynia fragrans* to come up in the close heat of a propagating house, I tried it, May 10th, in a pot out of doors,—sowed as carelessly as one would plant China Asters. I find

they have now, May 22, come up as thick as hair; an evidence of what the fine genial atmosphere of nature for the last week can accomplish—exceeding the heat (artificial) of the tropics. *G. C. T. Astoria, N. Y., May, 1848.*

NURSERY CATALOGUES.—I notice in each number of thy paper some prominent topic selected for an editorial leader. Suppose I suggest one for the next number—"Nurserymen's Catalogues,"—for really some of us, only familiar with little nurseries, and these chiefly of the apple, cannot understand how so many of them can offer for sale the "most extensive selections ever offered the public"—"the largest stock ever offered in the market," &c.—and so many of them the possessors of the "Ancient and real Linnean Botanic Garden and Nurseries?" How is all this? Are the matters thus blazoned forth in their catalogues and advertisements to be found in their nurseries? One who wants to believe all he can, would like to know. Sincerely thy friend, *J. F. Chester co., Pa.*

CHINESE SAND PEAR.—I observed some time since, in the Horticulturist, a description of the Chinese sand pear, in which it was referred to as an ornamental tree altogether.

One of my friends has a tree of this variety in bearing, and his family use its fruit for preserving. They assure me that it makes one of the best sweet meats that can be made of pears. *Thomas Hancock. Burlington, N. J.*

ERRATA.—In my article on strawberries, p. 497, 2nd column, I read thus—"in the variety *frasier framboise* (European wood strawberry) the flowers are always *diacious*." Here is an error so evident that I am inclined to think it is not so written in the MSS. Yet if it be so, it no less needs correction. The *frasier framboise* of the French, is a variety of the Hautbois. How the words "European wood strawberry" came placed where they are, is beyond my memory just now. *Wm. W. Valk. Flushing, May 9, 1848.*

ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.—The annual meeting of the society was held at the agricultural rooms on Saturday, 6th of May. JOEL RATHBONE, Esq., president, in the chair.

The amendments to the Constitution, proposed at last meeting, were adopted.

The report of the executive committee of the proceedings of the society, during the past year, was presented and ordered to be published.

MR. D. THOMAS VAIL, from the committee on nominations, reported a list of names for officers for the ensuing year. The following gentlemen were elected—being those reported by the committee:—

President—JOEL RATHBONE, of Bethlehem.
Vice Presidents—D. THOMAS VAIL, Troy; DR. HERMAN WENDELL, Albany; EZRA P. PRENTICE, Bethlehem; V. P. DOUW, Greenbush.

Secretary—B. P. JOHNSON, Albany.

Treasurer—A. E. BROWN, Albany.

Managers—AMOS BRIGGS, Schaghticoke; STEPHEN E. WARREN, Troy; J. M. LOVETT, Albany; WM. BUSWELL, Troy; J. McD. MCINTYRE, Albany; JAS. HENRY, Watervliet; WM. NEWCOMB, Pittstown; JAMES WILSON, Albany; A. OSBORN, Watervliet.

Committees for 1848.

On Green-house Plants and Flowers—Wm. Newcomb, of Pittstown, chairman; Dr. Stephen Wicks, Troy; A. J. Parker, Albany; C. Hemstreet, Troy; J. M. Lovett, Albany.

On Fruit—Dr. Herman Wendell, Albany, chairman; V. P. Douw, Greenbush; David Benson, Albany; B. Kirtland, Greenbush; W. Buswell, Troy.

On Vegetables—John S. Walsh, Bethlehem, chairman; Dennis Beldin, Troy; C. N. Bement, Albany; John H. Haydock, Troy; Robert F. Johnstone, Albany.

On Gardens—Luther Tucker, Albany, chairman; B. T. Cushman, Troy; C. F. Crosby, Watervliet.

On Essays, and for establishing synonyms of fruits—Dr. E. Emmons, Albany, chairman; Amos Briggs, Schaghticoke; Sanford Howard, Albany; John H. Willard, Troy; Dr. J. M. Ward, Albany.

On Discretionary Premiums—E. P. Prentice, Albany, chairman; Henry Vail, Troy; Wm. Cooper, Guilderland; David Hamilton, Watervliet; Seth H. Terry, Troy.

On Floral Designs, Bouquets, Ornaments, &c.—S. E. Warren, Troy, chairman; Abel French, Albany; George Gould, Troy; Erastus H. Pease, Albany; John B. Gale, Troy.

On Arrangements for Exhibition—For Albany—J. McD. McIntyre, chairman; James Wilson, Wm. Thorburn, Charles B. Lansing, Dr. John Wilson.

For Troy—S. E. Warren, D. T. Vail, Wm. Buswell, C. Hemstreet, Charles Dauchy.

Exhibitions for 1848-9.

At Albany, 2d Wednesday, 14th June—For fruits, cherries, strawberries, flowers, vegetables, &c.

At Troy, 2d Wednesday, 12th July—For fruits, cherries, currants, gooseberries, raspberries, flowers, vegetables, &c.

At Albany, September—Annual Show.

At Albany, 2d Wednesday of February, 1849. Annual Meeting—Fruit, flowers, &c.

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ANSWERS TO CORRESPONDENTS—Manures—E. B.—Liquid guano is prepared by putting 1lb. of guano in 3 gallons of water. The mixture should be allowed to stand 24 hours before using it. It produces the most decidedly beneficial effects on all plants in a growing state; applied when they are dormant, it is frequently injurious. Camellias, and other wood green house plants, are greatly benefited by it if watered with it while they are making young shoots.

RAPID GROWING VINES.—R. W. C.—Cobea scandens and Ipomea Learii, are the two best annual vines for covering a large surface rapidly. They are both very ornamental—may be had in pots of the florists, and should be turned out immediately.

FRUIT TREES.—A Boston Subscriber. It will

be best to remove all the old soil round your diseased pear tree, and replace with a compost of good peat loam from an old pasture, mixed with a peck of lime, a bushel of wood ashes, and a cart load of stable manure. This will bring the tree into a healthy bearing state again.—*R. L. P.* (Baltimore.)—The Madeleine is rather more liable to fire-blight than other pear trees—try Dearborn's seedling—a finer early sort.—*W.* (Trenton.)—If your peach tree ripens its fruit prematurely, and sends out wiry shoots along the branches with dwarfish, narrow leaves, it certainly has the yellows. It is better to dig it up and burn it at once, as the disease will spread. Pruning other peach trees directly after cutting off limbs of one having the yellows, is sufficient to communicate this disease. *W.* (Pittsburgh.)—If your cherry trees refuse to come into bearing from over luxuriance, dig a trench and cut off one-fourth of the roots at their outer extremities. Small cherry trees may be brought into bearing early by pinching out the ends of all the terminal shoots about the middle of June, thus forcing them to form fruit buds for the next year.

GRAPES.—A constant reader.—Give the soil in which your native grape vines grow a plentiful sprinkling of gypsum or plaster of paris, and turn this top-dressing under immediately. We have found this a complete protection against mildew. Under glass the floor of the vinery should be dusted over with flower of sulphur when the young grapes are formed, as directed by Mr. Allen in his pamphlet. This is a much neater process than throwing the sulphur on the bunches.

GOOSEBERRIES.—J. B. S. (Philadelphia.) Several of our correspondents tried the salt hay last spring for gooseberries, and found it to prevent the rust. It should however be spread under the bushes early in the spring.

RASPBERRIES.—J. Fulton, jr. The true Red Antwerp is one of the hardiest of all foreign raspberries. It bears good crops here without protection—but still better ones if the branches are bent down in autumn and slightly covered with earth.

GARDEN ENGINE.—M. P. (Richmond.) will find a description of various kinds in this number. Mr. Poole's machines are admirably made. The larger hand-engine will answer his purpose exactly.

CYPRESS VINE.—A Lady.—Soak the seeds three hours in warm water before planting. They will then all vegetate.

BOOKS.—A Novice.—Lindley's *Theory of Horticulture* is the best work on that branch of the subject in any language.—*Williamson.*—For a hand-book of reference the best little treatise on the kitchen garden, is Buist's *Family Kitchen Gardener*. It is to the point—no superfluous words. *Loudon's Suburban Horticulturist*, is a better book for the practical cultivator than his *Encyclopaedia of Gardening*.

ROSES.—L. (Rochester.) *Souvenir de Mal-*

maison and *Souchet*, are two of the most perfect and beautiful of everblooming roses. *Solfaterre* is a remarkably fine pale yellow Noisette in the same style as *Lamarque*, worthy of a place in every collection.

APPLE TREE BORER.—*W. Johnson*.—See our directions in last No. p. 531. You should apply the wash at once or it will be too late.

STRAWBERRIES.—*J. R. C.*—The "Aberdeen Bee-hive" is already in the hands of two or three cultivators in this country. The Messrs. Thorburn, of New York, we believe imported it first, and will offer plants for sale in August next. Swain-

stone's seedling likes strong, damp soil. It bears most abundantly with us though a staminate.—*Tyro*—You will easily understand the difference between strawberry blossoms if you compare *Hudson*, a pistillate sort, with *Early Scarlet* or *Ross' Phoenix*—staminate sorts.

* * * Correspondents who are *subscribers*, will hereafter find replies to any questions on subjects within the scope of this journal, in this department, (unless otherwise requested)—and all queries put in a *brief shape*, and sent to us *free of postage*, shall receive attention.—Ed.

ALBANY AND RENSSELAER HORTICULTURAL SOCIETY.

There will be four exhibitions during the year. The first to be held in June; the second in July; the third in September; the fourth in February.

Exhibition at Albany—Wednesday, June 14.

FRUITS.

Cherries—For the best and most expensive collection, not less than a dozen on each plate, \$3; for the second best, \$2; for the best three varieties, \$2; for the best one variety, \$1.

Strawberries—For the best and finest flavored dish, not less than half a pint, \$2; for the second best, and finest flavored dish, \$1.

FLOWERS.

Roses—Hardy, including all hardy varieties: for the best exhibition, \$3; for the best twelve, \$2; for the best six, \$1.

Pinks—For the best six distinct varieties, \$2; for the best three do, \$1.

Pæonies—For the best exhibition of Herbaceous Pæonies, \$2; for the best six, \$1.

Pansies—For the best ten, \$2; for the best six, \$1.

Pelargoniums—In pots, for the best six, \$2; for the best three \$1.

Fuchsias—In pots, the best six, \$2; the best three, \$1.

For the best display of Annual and Perennial flowers, \$2 00

For the best large round Bouquet for centre table vase, 2 00

For the best large flat Bouquet for mantel vase, 2 00

For the best basket Bouquet with handle, 2 00

For the best flat hand Bouquet, 1 00

For the best round hand Bouquet, 1 00

For the best six plants in pots, of different varieties, 2 00

VEGETABLES.

Turnip Beets—Best, not less than six, 1 00

Broccoli—Best, not less than three heads, 1 00

Beans—Best peck of string beans, 1 00

Best quart of Lima beans, 1 00

Cabbage—Best, not less than two heads, 1 00

Cauliflowers—Best, not less than two heads, 1 00

Celery—Best six roots, 1 00

Corn—Best half dozen ears of any variety, 1 00

Cucumbers—Best brace grown under glass, if before

any of open culture are exhibited, 1 00

Best brace open culture, 1 00

Lettuce—Best, not less than three heads, 1 00

Peas—Best half peck, 1 00

Potatoes—Best half peck, 1 00

Rhubarb—Best six stalks, 1 00

Squashes—Best, not less than three, 1 00

Tomatoes—Best, not less than two quarts, 1 00

Exhibition in Troy—Second Wednesday, July 12.

FRUIT.

Cherries—Best and most extensive collection, not less than a dozen on each plate, \$3; for the second do, \$2; for the best three varieties, \$2; for the best one variety, \$1.

Currants—Best and finest flavored variety, not less than half a pint, \$2; second best, \$1.

Gooseberries—Best and finest flavored variety, not less than half a pint, \$2; second best, \$1.

Raspberries—Best and finest flavored varieties, not less than half a pint, \$2; second best, \$1.

FLOWERS.

Carnation and Picotee Pinks—Best six varieties, \$2; best three varieties, \$1.

Dahlias—Best exhibition, \$2; best twelve varieties, \$2 best six varieties, \$1.

For the best display of Annual and Perennial flowers, 2 00

For the best large round Bouquet for Centre table vase, 2 00

For the best large flat Bouquet for a mantel vase, 2 00

For the best basket Bouquet with handle, 2 00

For the best flat hand Bouquet, 1 00

For the best round hand Bouquet, 1 00

For the best six plants of different varieties, in pots, 2 00

VEGETABLES.

Premiums will be awarded on all such varieties published in the June list, as were not exhibited at that meeting.

September Exhibition in Albany—Which will be the Annual Show.

(The day will hereafter be designated.)

FRUIT.

Apples—Best and most extensive collection of different varieties, \$3; second best, \$2; best six varieties, three specimens of each variety, \$2; best one variety, six specimens, \$1.

Pears—Best and most extensive collection of different varieties, \$3; second best, \$2; best six varieties, three specimens of each variety, \$2; best one variety, six specimens, \$1.

Peaches—Best and most extensive collection of different varieties, \$3; second best, \$2; best three varieties, three specimens of each variety, \$2; best one variety, six specimens, \$1.

Plums—Best and most extensive collection of different varieties, \$3; second best, \$2; best six varieties, not less than six of each variety, \$2; best one variety, not less than six specimens, \$1; best seedling, never before exhibited, \$2.

Nectarines—Best exhibition, not less than three specimens of each variety, \$3; best two varieties, not less than three specimens of each, \$2; best one variety, not less than three specimens, \$1.

Grapes—Foreign—Best exhibition of not less than three varieties, and two bunches of each variety, \$3; best two varieties, and not less than three bunches, of each, \$2; best one variety, not less than three bunches, \$1.

Grapes—Native—Best exhibition of not less than three varieties, and two bunches of each variety, \$3; best two varieties, and not less than two bunches of each, \$2; best one variety, not less than three bunches, \$1.

Figs—The best exhibition, not less than two varieties and three specimens of each variety, \$2; best one variety, not less than six specimens, \$1.

Watermelons—Best two varieties, \$2; best one variety, \$1.

Musk-melons—Best two varieties, \$2; best one variety, \$1.
Oranberries—Best half peck, \$2.
Assorted Fruit—Best basket of Assorted Fruit of various kinds, \$2.

FLOWERS.

Plants—Best six plants in pots of different varieties, \$2.
Dahlias—Best display, \$3; best twelve dissimilar blooms, \$2; best six dissimilar blooms, \$1; best flower, specimen bloom, \$1.
Roses—Hardy Perpetuals, including Hybrid Perpetuals and Isle de Bourbons—best ten varieties, \$2; best six varieties, \$1.
Phloxes—Best ten distinct varieties, \$2; best six distinct varieties, \$1; best seedling never before exhibited, \$1.
German Asters—Best display, \$2; second best, \$1.
Verbenas—Best twelve varieties, \$2; best six varieties, \$1; best seedling, never before exhibited, \$1.
Round Vase Bouquet—For Centre table vase,—best, \$2.
Flat Parlor Bouquet—For mantel vase—best, \$2.
Hand Bouquet—Best and most beautiful pair, one round and one flat, \$2.
Basket Bouquet—Best and most beautiful, with handle, \$2.
Floral Designs—Best, most beautiful, and most appropriate, \$3; second best, \$2; third best, \$1.

VEGETABLES.

For the best new Seedling Potatoe, 2 00
 For the best half peck Winter Potatoes, 1 00
 For the best Winter Squashes,—not less than two specimens to be exhibited, 1 00
 For the best Long blood Beets—not less than six specimens to be exhibited, 1 00
 For the best Carrots—not less than six specimens to be exhibited, 1 00
 For the best Parsnips—not less than six specimens to be exhibited, 1 00
 For the best Egg Plants—not less than two specimens to be exhibited, 1 00
 For the best Winter Cabbage—not less than two specimens to be exhibited, 1 00

For the best Brocoli—not less than two specimens to be exhibited, 1 00
 For the best Cauliflowers—not less than two specimens to be exhibited, 1 00
 For the best Celery—not less than six roots to be exhibited, 1 00
 For the best Martinias—not less than six specimens to be exhibited, 1 00
 For the best Tomatoes—not less than half a peck to be exhibited, 1 00
 For the best exhibition of different var'ts of Tomatoes, 1 00

Exhibition at Albany, on the second Wednesday February, 1849.

FRUIT.

Apples—Best exhibition, \$2; best one variety, not less than six specimens, \$1.

Pears—Best exhibition, \$2; best one variety, 1.

FLOWERS.

For the best six plants in pots, of different varieties, \$2.
 For the best display of cut Green House Flowers, \$2; for the second, do. do. \$1.
 For the best large round Bouquet for Centre table vase, 2 00
 For the best large flat Bouquet for mantel vase, 2 00
 For the best basket Bouquet, with handle, 2 00
 For the best round hand Bouquet, 1 00
 For the best flat hand Bouquet, 1 00
Camellia Japonica—For the best display of cut flowers with foliage, \$3; for the best six varieties, \$2; for the best three varieties, \$2.
Chinese Primroses—Best six varieties, in pots, \$2; best three varieties in pots, \$1.
Pansies—Best ten distinct varieties, \$2; best six distinct varieties, \$1.
 Discretionary premiums for various objects of extraordinary interest, not included in the above list, if any such offer, will be awarded, five dollars at each ordinary exhibition, and ten dollars at the September show.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The stated monthly meeting was held on Tuesday evening May 16, 1843. The President in the chair. The exhibition was very handsome; among the great variety of plants were a number new or rarely seen, of which were a specimen of a green Rose, *Doryanthes excelsa*, in full flower, shown in R. Buist's collection. *Azalea variegata*, presenting one mass of flowers enveloping completely the entire plant, a most beautiful sight; also a number of fine seedling *Azaleas* shown by Peter McKenzie. A fine specimen of *Habrothamnus elegans*, *Rhododendron* sp. etc. by James Bisset, gardener to James Dundas. A collection of choice Roses, Paul Joseph, Louis Bonaparte, &c., by William Hall. Several tables of Pelargonias, and collections of Tulips. Also Indigenous Plants by Robert Kilvington—specimens of Double flowered Lily of the Valley by Mrs. G. Billmeyer, of Germantown.

Of Vegetables.—A fine show of Cauliflowers by John Riley, gardener at the Insane Hospital. Very large Victoria Rhubarb by William Hobson and Robert Dunk, and new Potatoes and Cucumbers by James McKee, gardener to C. Chauncey, Burlington. And extensive collections by Anthony Felton.

Reports of the Committees.

The committee on plants and flowers, after a minute investigation of the several articles for competition, have awarded the following premiums, viz, For the best 10 named Pelargonias, to James Bisset, gardener to James Dundas; for the second best do. to B. Daniels, gardener to C. Cope; for the third best do. to R. Buist; for the best six named varieties of perpetual Roses, to William Hall; for the best 12 Tulips to Jonathan Bass; for the second best do. to James Ferris; for the third best, to R. Farrington; for the best four named Cinerarias to B. Daniels; for the second best do. to Benjamin Guilliss; for the best Hot house and best Green house plants, to James Bisset; for the best collection of plants in pots to R. Buist; for do. second best, to James Bisset; the

third best do. to B. Daniels, gardener to C. Cope; for the fourth best do. to James McDonald, gardener to Miss Gratz; for the best Indigenous plants, Robert Kilvington; for the best Bouquet to D. Daniels; for the second best Bouquet, to R. Kilvington; for the best Bouquet formed of Indigenous flowers, to R. B. Kilvington; for the best basket of cut flowers, to B. Daniels.

And a special premium of three dollars for two very fine seedling Pelargonias, to R. Buist.

The committee would recommend a special premium of five dollars to James Bisset, gardener to James Dundas, for two beautiful floral arches composed of *Bignonia venusta* and the scarlet flowering thorn.

The Committee would mention with pleasure a very fine plant of the *Doryanthes excelsa*, in full flower, from the garden of Mr. Buist; likewise a most splendid specimen of the *Azalea variegata* in profuse flower, and many fine seedling varieties in flower from the garden of Mr. McKenzie.

The Committee noticed as new and interesting specimens, the double flowering Lily of the Valley from Mrs. G. Billmeyer.

The Committee on Vegetables report that they have awarded the following premiums:—For the best Cucumbers to Anthony Felton; for the second best cucumbers, to James McKee, gardener to C. Chauncey; for the best Rhubarb, to William Hobson; for the second best Rhubarb, to Robert Dunk; for the best Potatoes, to James McKee; for the second best Potatoes, to Anthony Felton. For the best display of Vegetables by market gardeners, to Anthony Felton; for the second best display by do. to A. Felton; for the best display by amateur gardeners to B. Daniels, gardener to C. Cope; for the second best display by do. to William Johns.

The Committee also award a special Premium of two dollars each to James McKee, and John Riley, gardener at the Insane Hospital, for very fine displays of Cauliflowers.

Member elected.—Mrs. Dr. James Rush.

On motion adjourned. THOS. P. JAMES, Rec. Sec.

MASSACHUSETTS HORTICULTURAL SOCIETY.

Opening of the Hall for the Season.

Saturday, May 13, 1893.—The Hall of the Massachusetts Horticultural Society opened for the season to the public this day under favorable auspices, but on account of a heavy shower of rain, many were deprived of the pleasure of witnessing the magnificent display of Greenhouse plants which on no former occasion were in so great perfection. The plants were generally well grown, including many rare species and varieties, beautiful indeed, and worthy of the admiration and praise bestowed on them. It would be impossible to enumerate all, even if it were desirable, and a few only will be named.

From the President of the Society, (not in competition,) a very large *Azalea indica* variegata, three feet in diameter, four new seedling *Azaleas* finely striped, and *Azalea indica*, exquisita, Bellerophon, decora and tricolor recently imported from Germany. Twenty pots of choice *Esrica*, viz: *E. vestita elegans*, *E. ventricosa alba*, *superba* and *breviflora*. *E. odorata*, and a plant imported for *E. cavendishii*, very superb, but not true; *Lilium peregrinum*, or *testaceum*, two plants; a fine seedling *Rhododendron* between *R. campanulatum* and *R. catabiense*; *Epiphyllum*, *Fuchsias* and *Cinerarias*, &c., in great variety.

Mr. Wilder's display was large, and very rich, including in his cut flowers more than two hundred blooms of *Noisette Solferino*, and *Lamarque* roses, fine *Camellias* and other beautiful greenhouse flowers.

From Hovey & Co., eighteen plants of exquisite *Pelargoniums*, viz: Beck's Centurion, Rosamund, Grandiflora, Foster's Orion, Drury's Pearl, and Celestial; these received Mr. Beck's first prize of five pounds. The Society's first premium in Class I, was awarded for Beck's *Blanche*, *Desdemona*, *Isabella*, *Rosy Circle*, *Celestial* and ———— and the first premium in Class 2, for Beck's *Mustee Zanzummin*, *Gigantic*, *Marc Antony*, *Celestial* and Hovey's *Jenny Lind*; also a plant of *Campanula nobilis* and cut flowers of scarlet *turban ranunculus*.

From T. H. Perkins, by William Quant, a grand display of greenhouse plants and cut flowers, including eighteen *Pelargoniums* of various sorts, finely grown, six *Fuchsias* (fine plants), six *Cinerarias*, six *Calceolarias*, six extra double *Gilliflowers*. *Roses*,—a splendid specimen of *Auricaria excelsa*, and a magnificent plant of *Ixora coccinea*.

From Nonantum Vale, by John Cadness, fine plants of *Cryptomeria Japonica*, *Burchellia speciosa*, *Clematis azurea grandiflora*, *Azalea indica variegata*, *Cineraria bicolor*, *Cadnessii elegans*, *Sylph*, *Emperor*, *Van Houttei*, and *Ada*. Also, six *Calceolarias*, nine *Bouquets* and cut flowers in variety.

From Joseph Breck & Co., *Hyacinths*, and a great variety of cut flowers.

From R. M. Copeland, fine *Hyacinths*.

From O. H. Mathers, by Thomas Needham, a collection of superb greenhouse flowers.

From Edward M. Richards, cut flowers, with *Fumaria cucularia* and *Trillium pictum*, fine indigenous plants.

From G. C. Crowningshield, by John Quant, a fine show of greenhouse plants, viz., six *Pelargoniums*, to which were awarded Beck's second prize of two pounds—viz., for *Matilda*, *Joan of Arc*, *Orange boven*, *Sylph*, *Prince Albert* and *Lady Douro*: six *Ericas* and fine plants of *Lechenaultia formosa*, *Brugmansia*, *Pimelia spectabilis*, *Epiphyllum Jenkinsonii*, *Cytisus*, &c. &c.

From Azel Bowditch, *Pelargoniums*, *Cacti*, and other plants, but of which no list was rendered to the chairman; also *bouquets*.

From Parker Barnes, plants without list.

From James Nugent, plants, but no return made, also fine cut flowers.

Award of Premiums on Pelargoniums—Fuchsia, various sorts, Pelargoniums, (Beck's Special Prizes.)

To Hovey & Co. for the best six dissimilar plants	
1st premium	\$25 00
To John Quant for the 2nd best, do. 2nd do.	10 00

SOCIETY'S PREMIUMS—Class 1st,

To Hovey & Co. for the best six dissimilar plants,	
1st premium	\$6 00
To William Quant, second best, 2d premium,	4 00

Class 2d.

To Hovey & Co., for the best six dissimilar plants, 1st premium,	\$6 00
To Azel Bowditch, do. second best, 2d premium,	4 00

Roses, no premium awarded.

<i>Fuchsias</i> —To Wm. Quant, for the best six, 1st prem.	6 00
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(No competitor for the 2nd premium.)

<i>Heaths</i> —To John Quant a premium of	2 00
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Various sorts—To Wm. Quant, for the best display,	8 00
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To John Quant do. do. 2nd best do.	5 00
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John Cadness,	Judges.
Thomas Needham,	
Francis Thiele,	

AWARD OF PREMIUMS ON *Cinerarias*, *Calceolarias*, *Cacti*, *Hyacinths* and *Bouquets*.

CINERARIAS—To Wm. Quant, for the best six varieties,	\$3 00
To John Cadness, 2nd best do.	2 00

CALCEOLARIAS—To John Cadness, for the best six varieties,	3 00
To Wm. Quant, do. 2nd best do.	2 00

CACTI—To A. Bowditch, for the best six varieties,	3 00
(No competition for the 2nd premium.)	

HYACINTHS—To R. M. Copeland, for the best display,	5 00
To J. Breck & Co. and best,	3 00

BOUQUETS—To John Cadness for the best vase	3 00
To R. Bowditch, for the best Parlor	2 00
To John Cadness for the 2nd best	1 00

James Nugent,	Judges.
John Quant,	
— Cruickshank,	

The Committee on CUT FLOWERS, award

To Thomas Needham the 1st premium of	3 00
To Wm. Quant, 2nd do.	2 00

They also recommend a gratuity to the President for his fine display of greenhouse plants, of

For his splendid show of <i>Roses</i> ,	3 00
To Wm. Quant, for a superb <i>Ixora coccinea</i> ,	3 00
To James Nugent for a fine show of Cut Flowers,	2 00

JOSEPH BRECK, Chairman of Committee on Flowers, &c.

Business meeting, April 15th, 1893. The President, M. P. WILDER, in the chair.

The President, by request of the Chairman of the Committee of Publication, presented the 2d number of the "Transactions of the Society," embracing the business meetings and exhibitions to the close of the year, and stated that the plates of the number were coloured by the hand of experienced artists, increasing the cost of the work to the society, and that a report thereof would be made in due season.

May 6th, 1893. President M. P. WILDER in the chair.

Voted, That the Recording Secretary be requested, and authorised, to distribute the tickets of members and invited guests through the "penny-post," and draw upon the Treasurer for such sum as may be necessary to defray the expense thus incurred.

Voted, That the sum of \$10 be paid to Mrs. Hurd, of Billerica, by the Treasurer, for a grass bouquet, presented by her at the annual exhibition, and removed from the Society's Hall without her knowledge or consent.

The following motion was submitted by Cheever Newhall, Esq., with the desire that it be laid upon the table for consideration, to be taken up and acted upon at the stated meeting in July next, viz:

That appropriations for the objects of this Society be made at the stated meetings, in January, April, July, and October, and at no other meeting. The following gentlemen were elected members of the Society:

Life—George W. Warren, Boston.

Subscription—Wm. S. Wilson, Boston; John J. Clarke, Roxbury.

E. C. R. WALKER, Rec. Sec'y.

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